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Martha E. Brants.
Pekin, Ill.
1902.

KEY TO
FISH'S ARITHMETIC
NUMBER TWO

FOR
TEACHERS AND PRIVATE LEARNERS



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KEY TO ARITHMETIC, NUMBER TWO.

For Teachers.

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K E Y

TO

GRADED ARITHMETIC,

NUMBER TWO.

Art. 38.

2. 1899 feet.	20. 289142.	38. \$944.66.
3. 2011 pounds.	21. 415184.	39. 8227 pounds.
4. 2455 men.	22. \$450.56.	40. \$19202.50.
5. \$5268.	23. \$3136.81.	41. 4125 bu.;
6. \$29.26.	24. \$5395.61.	\$8733.25.
7. \$383.90.	25. 4092 yards.	42. \$39148.53.
8. \$65.94.	26. \$18.12.	43. \$1435.50.
9. \$287.67.	27. \$80.87.	44. \$5735.75.
10. \$376.71.	28. \$7393.33.	45. \$20701.31.
11. 7504 pounds.	29. \$17.67.	46. \$3202.50.
12. \$696.87.	30. \$12650.	47. \$7329.30.
13. 4576.	31. \$6692.23.	48. \$1571.56.
14. 5040.	32. 961 miles.	49. \$1196.38.
15. 4824.	33. \$149.18.	50. \$1542.04.
16. 27944.	34. 105233.	51. \$12933.16.
17. 29600.	35. \$220.34.	52. \$63452.87.
18. 61632.	36. 181777.	
19. 3237.	37. 11965.	

Art. 45.

7. 446 years.	9. 67 years.	11. 57 years.
8. 277 “	10. 60 “	12. 80 “

13. 48 years.	23. \$64.84.	33. 2324 days.
14. 58 “	24. \$135.28.	34. 4175.
15. 57 “	25. \$14.11.	35. 51.
16. 183 “	26. 3231.	36. 5113.
17. 43 “	27. \$51.24.	37. \$15.21.
18. \$240.81.	28. \$157.63.	38. \$22.10.
19. \$95.58.	29. 8728 rods.	39. \$25.26.
20. \$38.08.	30. 45736 tons.	40. 32798.
21. \$6.16.	31. 2123 tons.	41. 35555.
22. 32358.	32. 2324 feet.	

$$42. 4062 + 12356 + (15000 - 975) = 30443, \text{ Ans.}$$

$$43. 23462 + 9030 - (34000 - 7640) = 6132, \text{ Ans.}$$

$$44. 19876 - 6032 - (12000 - 673) = 2517, \text{ Ans.}$$

$$45. \$13640 - \$10000 = \$3640, \text{ Ans.}$$

$$46. 237321 - 158933 = 78388, \text{ Ans.}$$

$$47. \$15740.80 - (\$5085 + \$7640.75) = \$3015.05, \text{ Ans.}$$

$$48. \$1248.65 - \$1540 = \$291.35, \text{ Ans.}$$

$$49. \$32000 - (\$22700 + \$4375 + \$2862) = \$2063, \text{ gain, Ans.}$$

$$50. \$125000 - (\$44675 + \$26380) = \$53945, \text{ Ans.}$$

$$52. 3427. \quad 53. 3745. \quad 54. 1152. \quad 55. \$113.51.$$

(56.)	(57.)	(58.)
\$12470	\$10000	\$21600.00
{ 4070	{ 1500	{ 7638.50
{ 927	{ 1250	{ 3210.65
{ 1000	{ 375	{ 1245.18
<u>\$6473, Ans.</u>	<u>1463</u>	<u>\$9505.67, Ans.</u>
	\$5412, Ans.	

$$\begin{array}{r}
 (59.) \\
 \$75860 \\
 \{ \begin{array}{l} 45640 \\ 25175.75 \end{array} \\
 \hline
 \$5044.25, \text{ Ans.}
 \end{array}$$

$$\begin{array}{r}
 (61.) \\
 \$50.00 \\
 \{ \begin{array}{l} 9.68 \\ 7.49 \\ 19.95 \\ 2.58 \\ 9.75 \end{array} \\
 \hline
 \$.55, \text{ Ans.}
 \end{array}$$

$$\begin{array}{r}
 (63.) \\
 \$42075.00 \\
 \{ \begin{array}{l} 8375.51 \\ 8375.50 \\ 8375.50 \end{array} \\
 \hline
 \$16948.50, \text{ Ans.}
 \end{array}$$

$$\begin{array}{r}
 (60.) \\
 \$8752 \\
 \{ \begin{array}{l} 4234 \\ 1700 \\ 962 \\ 49 \end{array} \\
 \hline
 \$1807, \text{ Ans.}
 \end{array}$$

$$\begin{array}{r}
 (62.) \\
 \$47840 \\
 \{ \begin{array}{l} 18755 \\ 18755 \end{array} \\
 \hline
 \$10330, \text{ Ans.}
 \end{array}$$

$$\begin{array}{r}
 (64.) \\
 \$5000 \\
 \{ \begin{array}{l} 680 \\ 820 \\ 1580 \\ 420 \end{array} \\
 \hline
 \$1500, \text{ Ans.}
 \end{array}$$

Art. 55.

- | | |
|--|--|
| 12. $\$9 \times 231 = \$2079, \text{ Ans.}$ | 21. $\$4.37 \times 7 = \$30.59, \text{ Ans.}$ |
| 13. $\$8 \times 2140 = \$17120, \text{ Ans.}$ | 22. $\$6 \times 326 = \$19.56, \text{ Ans.}$ |
| 14. $\$5 \times 1238 = \$6190, \text{ Ans.}$ | 23. $6 \text{ cents} \times 379 = \$22.74, \text{ Ans.}$ |
| 15. $7 \text{ cents} \times 752 = \$52.64, \text{ Ans.}$ | 24. $\$6.75 \times 7 = \$47.25, \text{ Ans.}$ |
| 20. $6 \text{ cents} \times 675 = \$40.50, \text{ Ans.}$ | |

Art. 56.

- | | |
|---|----------------------|
| 2. 12825 ; 18050. | 12. \$51188.62. |
| 3. 24408 ; 31866. | 13. 17902976 pounds. |
| 4. \$1019.76 ; \$1675.32. | 14. \$154037.36. |
| 5. \$4579.25 ; \$5776.90. | 15. 15704325 days. |
| 6. 482400 ; 430944 ; 874752 ;
\$1239.30 ; \$1348.65 ;
\$4592.70. | 16. 2082600 cents. |
| 7. 2953216 ; 5606496 ;
7083104 ; \$8977.50 ;
\$33345.00 ; \$46312.50. | 17. 1508741097. |
| 8. \$264958 ; \$90288. | 18. 1587862270. |
| 9. 404914 pounds. | 19. 3654860576. |
| 10. 186516 yards. | 20. 8198473608. |
| 11. 241768 bushels. | 21. 982275037. |
| | 22. 3363731415. |
| | 23. \$2715413.50. |
| | 24. \$2529.25. |
| | 25. \$319192. |

Art. 57.

- | | | |
|----------------|-----------------|----------------|
| 1. \$3505.92. | 7. 54793296. | 13. 18899264. |
| 2. 3605472. | 8. \$133804.80. | 14. 40905480. |
| 3. 3906168. | 9. 73152. | 15. 0. |
| 4. \$19789.44. | 10. 1031875. | 16. 538788276. |
| 5. \$84338.28. | 11. 0. | |
| 6. 16810320. | 12. 14357520. | |
17. $\$8 \times 29 \times 47 = \10904 , *Ans.*
18. $\$7 \times 45 \times 16 = \5040 , *Ans.*
19. $57 \times 26 \times 14 = 65208$ yards, *Ans.*
20. $13 \text{ cts.} \times 128 \times 216 = \3594.24 , *Ans.*
21. $(239 \times 3 + 248) \times \$4.25 = \$4101.25$, *Ans.*

Art. 58.

3. 4360;	4. 140400;	5. \$80000.
43600;	1170000 ;	6. \$10800.
436000;	788000 ;	
4360000.	58500000.	

7. $\$1920 - (\$10.50 \times 240) = \$600$, *Ans.*

8. $\$184.50 \times 48 - \$4.80 \times 130 = \$8232$, *Ans.*

9. $\$35 \times 40 + \$29 \times 56 = \$3024$;
 $\$32 \times (40 + 56) = \48 , gain, *Ans.*

10. $\$3000 - (\$40 \times 52) = \$920$, *Ans.*

11. $207300 - 11328 - (95648 + 10050) = 90274$, *Ans.*

12. $\overline{675 - 133} \times \overline{465 - 186} = 151218$, *Ans.*

13. $\$8.50 \times 125 - \$1050 = \$12.50$, gain, *Ans.*

(14.)

$$\begin{array}{r} \$37 \times 136 = \$50.32 \\ 2.50 \times 56 = 140 \\ 16.75 \times 17 = 284.75 \\ 3.125 \times 42 = \underline{131.25} \\ \$606.32, \text{ } Ans. \end{array}$$

(16.)

$$\begin{array}{r} \$16.25 \times 25 = \$406.25 \\ .28 \times 64 \times 14 = 250.88 \\ 4.18 \times 36 = 150.48 \\ 7.84 \times 16 = \underline{125.44} \\ \$933.05, \text{ } Ans. \end{array}$$

(15.)

$$\begin{array}{r} \$5.25 \times 128 = \$672 \\ .06 \times 1600 = 96 \\ .12 \times 750 = \underline{90} \\ \$858, \text{ } Ans. \end{array}$$

(17.)

$$\begin{array}{r} \$7 \times 1500 = \$10500 ; \\ 1500 \text{ bbl.} - 800 \text{ bbl.} = 700 \text{ bbl.} \\ \$10 \times 800 = \$8000 \\ \$6 \times 700 = \underline{4200} \\ \$12200 \\ \$12200 - \$10500 = \$1700, \text{ } Ans. \end{array}$$

18. $\$2 \times 584 - \$9 \times 78 = \$466$, recd., *Ans.*

19. $\overline{32 + 39} \times 14 = 994$ miles, *Ans.*
20. $\overline{\$76 \times 209} - (\$60 \times 107 + \$75 \times 18 + \$218 \times 4) = \$7242,$
Ans.
21. $\$45 \times \overline{45 + 76} = \5445 , sold for ;
 $\$38 \times 45 + \$47 \times 76 = \$5282$, bought for ;
 $\$5445 - \$5282 = \$163$ gain, *Ans.*
22. $\$15760 - (\$730 \times 5 + \$226.50 \times 6 + \$2000 + \$1589.80)$
 $= \$7161.20$, *Ans.*
23. $547 \times 150 - 5000 = 77050$, *Ans.*
24. $97000 - 6000 + 1500 = 92500$, *Ans.*
25. $\$73.46 - \$3.96 + \$1645 = \1714.50 , *Ans.*
26. $\$25592.32 + \$1759.50 \times 10 = \$43187.32$, *Ans.*

Art. 69.

2. 5801 tons.	24315 $\frac{2}{3}$.	24. 163 pounds ;
3. 25844 days.	9. 53266 ;	300 “
4. 6294 rods.	23673 $\frac{7}{8}$;	25. \$172.65.
5. 11966 ;	26633 ;	26. 5801 $\frac{1}{8}$ tons.
13314.	42612 $\frac{4}{5}$;	27. 2584 $\frac{1}{8}$ days.
6. 50384 $\frac{4}{5}$;	35510 $\frac{4}{5}$.	28. \$820.50.
17150 ;	10. 12515 tons.	29. 976 feet.
13338 $\frac{3}{4}$.	11. 6052 $\frac{2}{5}$ bushels.	30. 2594 men.
7. 417911 $\frac{2}{3}$;	12. \$7106 $\frac{5}{6}$.	31. 32793 pounds.
149510 $\frac{3}{8}$;	13. 9375 bushels.	32. 11750 bushels.
128151 $\frac{6}{7}$.	20. 1592 bbl. ;	33. 71.474 $\frac{4}{7}$ miles.
8. 10421 ;	883 $\frac{3}{4}$ bbl.	34. 8219 men.
9118 $\frac{3}{8}$;	21. \$108.50.	35. 20116 $\frac{1}{3}$ acres.
14598 $\frac{2}{5}$;	22. 93 oranges.	36. 63362 rods.
12157 ;	23. 91 yards.	

Art. 70.

5. \$9.58.	32736;	25. 7071.
6. \$14.89.	30397 $\frac{39}{42}$.	26. 8723.
7. \$25.21.	17. 840 $\frac{2}{114}$;	27. 1172 $\frac{664}{736}$.
8. 354 times.	630 $\frac{2}{152}$;	28. 4321.
9. 416 “	560 $\frac{2}{171}$;	29. 2036.
10. 672 “	469 $\frac{86}{204}$.	30. 3645 $\frac{2867}{3076}$.
11. 1763 “	18. 460 pounds.	31. 7500.
12. 3300 “	19. 465 acres;	32. 43785.
13. 13 $\frac{20}{103}$ “	334 $\frac{29}{5}$ “	33. \$97.
14. 444 $\frac{8}{700}$ “	20. 1607 barrels.	34. \$76.
15. 784; 720;	21. 394.	35. \$1823 $\frac{86}{313}$.
735; 641 $\frac{25}{5}$.	22. 5482.	36. \$135.
16. 35464;	23. 7198.	37. 456 pounds.
38688;	24. 31416.	

38. $420 - 124 = 296$, *Ans.*

39. $1246 \times 98 = 122108$, *Ans.*

40. $84099 \div 3000 = 28\frac{99}{3000}$, *Ans.*

41. $4870 + 312 = 5182$, *Ans.*

Art. 71.

3. 1242 $\frac{69}{100}$.	7. 1131 $\frac{69}{420}$.	11. \$43.
4. 304 $\frac{631}{1000}$.	8. 315.	12. 20 lots.
5. 7103 $\frac{2000}{10000}$.	9. 150 bales.	
6. 12.	10. 75 horses.	

Art. 74.

(3.)

	13
\$	7
\$	5
7	3
<hr/>	
	13, Ans.

(4.)

\$6	42
21	18
6	6
	4
<hr/>	
	4, Ans.

(5.)

7	21
12	8
\$	60 ⁵
\$	\$
3	6 ²
<hr/>	
	80, Ans.

(6.)

	32
\$6	8
9	27
	6
<hr/>	
	48, Ans.

(7.)

	\$4 ²
\$18	45 ⁵
<hr/>	
	10 tons,
	Ans.

(8.)

	\$10 ⁷
\$80	112 ¹⁴
<hr/>	
	98 barrels,
	Ans.

(9.)

	10
30	195
56	7
<hr/>	
8	65
<hr/>	
	8 $\frac{1}{8}$ tubs,
	Ans.

(10.)

	30 ²
75	95 ¹⁹
<hr/>	
	38 bushels,
	Ans.

(11.)

	40 ²⁰
18	45 ⁵
<hr/>	
	100 cents,
	Ans.

(12.)

	\$3
\$18	6
	24 ⁴
<hr/>	
	24 suits,
	Ans.

(13.)

	\$7
³ \$18	12 ²
3	14
<hr/>	
	4 $\frac{2}{3}$ tons,
	Ans.

(14.)

	\$180 ³⁰
6	150
<hr/>	
	\$4500, Ans.

(15.)

\$3	\$180 ³
40	120
36	
<hr/>	
	3 bales, Ans.

(16.)

60	240 ⁴
28	56 ²
9	18 ²
<hr/>	
	16, Ans.

(17.)	(19.)	(21.)
$ \begin{array}{r l} {}^7 \$A & 72 \\ 15 & 48^{16} \\ 7 & 28^4 \\ 6 & 5 \\ \hline 7 & 64 \\ \hline & 9\frac{1}{7}, \text{ Ans.} \end{array} $	$ \begin{array}{r l} 70 & 80 \\ 50 & 60 \\ 24 & 50 \\ 20 & 16 \\ \hline & 44^2 \\ \hline & 32, \text{ Ans.} \end{array} $	$ \begin{array}{r l} \$1.25 & \$80^{16} \\ & 75^3 \\ \hline & 48 \text{ days,} \\ & \text{Ans} \end{array} $
(18.)	(20.)	(22.)
$ \begin{array}{r l} {}^{14} \$A & 66^{33} \\ 45 & 18^3 \\ 7 & 27 \\ 30 & 25 \\ \hline 98 & 99 \\ \hline & 1\frac{1}{98}, \text{ Ans.} \end{array} $	$ \begin{array}{r l} & \$7.20^{12} \\ .60 & 12 \\ \hline & 144 \text{ bushels,} \\ & \text{Ans.} \end{array} $	$ \begin{array}{r l} & \$50 \\ 12 & 48^4 \\ \hline & \$2.00, \text{ Ans.} \end{array} $

Art. 75.

1. $3690 \div 246 = 15, \text{ Ans.}$
2. 246 can be subtracted from 3690, 15 times, *Ans.*
3. $3690 = 246 \times 15, \text{ Ans.}$
4. $84 + 23 \times 427 - 259 = 17976, \text{ Ans.}$
5. $14304 \div 2400 \div 25 = 149, \text{ Ans.}$
6. $364 \div 2 \times 2 \times 7 = 13, \text{ Ans.}$
7. $106 \times 127 - 15341 \div 29 = 12933, \text{ Ans.}$
8. $107100 \div 42 \times 34 = 75, \text{ Ans.}$
9. $375 \times 56 + 124 = 21124, \text{ Ans.}$
10. $2240 \times 250 \div 2000 = 280;$
 $280 \div 250 = 30 \text{ tons, Ans.}$

11. $\$2 \times 300 + \$750 - \$3 \times 120 + \$90 \div 25 = \$36$, *Ans.*
12. $28 \text{ cts.} \times 126 \div 13 \text{ cts.} = 271\frac{5}{13}$ pounds, *Ans.*
13. $\$900 \div \$60 - \$45 = 60 \text{ mo.} = 5 \text{ years}$, *Ans.*
15. $(60 \text{ cts.} + 78 \text{ cts.} + 90 \text{ cts.}) \div 3 = 76 \text{ cents}$, *Ans.*
16. $\$104 + \$97 + \$128 + \$99) \div 4 = \$107$, *Ans.*
17. $(\$1500 + \$2976 + \$1895) \div 3 = \$2123\frac{2}{3}$, *Ans.*
18. $\$487,20 \div (\$25 - \$8.75 + \$4.65) = 42 \text{ weeks}$, *Ans.*
19. $\$4578 - \$1642 \div 8 = \$367$, *Ans.*
20. $\$7560 \div 140 = \54 , cost ;
 $(\$75 \times 86 + \$54 \times 54) - \$7560 = \1806 , *Ans.*
21. $\$75000 \div 52 = \1442.307 per week ; } *Ans.*
 $\$75000 \div 12 = \6250 per month. }
22. $(42 \text{ cts.} \times 44 \times 5) \div 20 \text{ cts.} = 462$ pounds, *Ans.*
23. $(\$2492 - \$1424) \div \$3 = 356$ cords ; } *Ans.*
 $\$1424 \div 356 = \4 , cost. }
24. $\$7650 - \$63 \times 150 = \$1800$, *Ans.*
25. $\$600 \div 100 \times 350 = \2100 , *Ans.*
26. $\$.75 \times 1600 \div \$.40 = 3000$ pounds, *Ans.*
27. $\$9.25 - \$638.75 \div 365 = \$7.50$, *Ans.*
28. $\$16 \times 12 + \$13 \times 17 = \$413$;
 $\$18 \times 29 = \522 ; $\$522 - \$413 = \$109$, *Ans.*
29. $\$3 \times 16 + \$2 \times 40 - \$4 \times 15 = \68 , *Ans.*
30. $\$133 \times 28 \div \$1500 - \$968 = 7 \text{ years}$, *Ans.*
31. $(68 \times 40 - \$180 \times 8) \div \$32 = 40$ cows, *Ans.*
32. $\$2058 - \$1482 \div 288 = \$2$, *Ans.*
33. $6300 \div 15 - 372 \div 3 = 420 - 124 = 296$, *Ans.*

$$34. \overline{12460 \div 10} \times \overline{475 - 377} = 1246 \times 98 = 122108, \text{ Ans.}$$

$$35. 450 + 60 \div 15 + 125 = 159, \text{ Ans.}$$

$$36. (6070 - 1200) + (4680 \div 15) = 4870 + 312 \\ = 5182, \text{ Ans.}$$

$$37. 384 + 3749 + 4764 = 8897, \text{ Ans.}$$

$$38. 9250 - 496 + 541 \times 45 = 33099, \text{ Ans.}$$

$$39. 50000 - 0 + 850 \div 50 = 50017, \text{ Ans.}$$

$$40. 3750 \div 625 \times 108 + 174 = 822, \text{ Ans.}$$

Art. 87. ¹⁶

$$2. 5, 5, 3, 3.$$

$$3. 2, 7, 11.$$

$$4. 5, 5, 2, 2, 2.$$

$$5. 5, 5, 5, 5.$$

$$6. 5, 3, 3, 3, 7.$$

$$7. 3, 5, 7, 11.$$

$$8. 3, 3, 2, 163.$$

$$9. 5, 5, 7, 3, 3, 2, 2.$$

Art. 91.

$$\begin{array}{r|rr} (2.) & 42 & 112 \\ 2 & 21 & 56 \\ \hline & 3 & 8 \end{array}$$

$$2 \times 7 = 14, \text{ Ans.}$$

$$\begin{array}{r|rr} (3.) & 96 & 544 \\ 2 & 48 & 272 \\ \hline & 24 & 136 \\ 2 & 12 & 68 \\ \hline & 6 & 34 \\ 2 & 3 & 17 \end{array}$$

$$2 \times 2 \times 2 \times 2 \times 2 = 32, \text{ Ans.}$$

(4.)

$$\begin{array}{r|rrr} 2 & 56 & 72 & 92 \\ 2 & 28 & 36 & 46 \\ \hline & 14 & 18 & 23 \end{array}$$

$$2 \times 2 = 4, \text{ Ans.}$$

(5.)

$$\begin{array}{r|rrr} 7 & 21 & 42 & 77 \\ \hline & 3 & 6 & 11 \end{array}$$

$$7, \text{ Ans.}$$

(6.)

$$\begin{array}{r|rrr} 3 & 36 & 48 & 216 \\ 2 & 12 & 16 & 72 \\ 2 & 6 & 8 & 36 \\ \hline & 3 & 4 & 18 \end{array}$$

$$3 \times 2 \times 2 = 12, \text{ Ans.}$$

(7.)

$$\begin{array}{r|rrr} 3 & 105 & 216 & 405 \\ \hline & 35 & 72 & 135 \end{array}$$

$$3, \text{ Ans.}$$

(9.)

$$\begin{array}{r|rr} 154 & 1 & 210 \\ 112 & 2 & 154 \\ \hline 42 & 1 & 56 \\ 42 & 3 & 42 \\ \hline & & 14, \text{ Ans.} \end{array}$$

(10.)

$$\begin{array}{r|rr} 316 & 2 & 664 \\ 288 & 9 & 632 \\ \hline 28 & 1 & 32 \\ 28 & 7 & 28 \\ \hline & & 4, \text{ Ans.} \end{array}$$

(11.)

$$\begin{array}{r|rr} 126 & 1 & 189 \\ 126 & 2 & 126 \\ \hline & & 63, \text{ Ans.} \end{array}$$

(12.)

$$\begin{array}{r|rr} 300 & 1 & 375 \\ 300 & 2 & 300 \\ \hline & & 75, \text{ Ans.} \end{array}$$

(13.)

$$\begin{array}{r|rr} 225 & 1 & 270 \\ 225 & 5 & 225 \\ \hline & & 45, \text{ Ans.} \end{array}$$

(14.)

$$\begin{array}{r|rr} 468 & 2 & 1184 \\ 248 & 1 & 936 \\ \hline 220 & 1 & 248 \\ 196 & 7 & 220 \\ \hline 24 & 1 & 28 \\ 24 & & 24 \\ \hline & & 4, \text{ Ans.} \end{array}$$

(15.)

$$\begin{array}{r|l|l} 432 & 1 & 648 \\ 432 & 2 & 432 \\ \hline & & 216, \text{ Ans.} \end{array}$$

(16.)

$$\begin{array}{r|l|l} & & 315 \\ 135 & 2 & 270 \\ 135 & 3 & 45, \text{ Ans.} \\ \hline & & \end{array}$$

(17.)

$$\begin{array}{r|l|l} & & 364 \\ \text{Ans. } 182 & 2 & 364 \\ \hline & & \end{array}$$

(18.)

$$\begin{array}{r|l|l} & & 1575 \\ 756 & 2 & 1512 \\ 756 & 12 & 63, \text{ Ans.} \\ \hline & & \end{array}$$

(19.)

$$\begin{array}{r|l|l} & & 1036 \\ 1008 & 1 & 1008 \\ 1008 & & 28, \text{ Ans.} \\ \hline & & \end{array}$$

(20.)

$$\begin{array}{r|l|l} & & 360 \\ 216 & 1 & 216 \\ 144 & 1 & 144 \\ 72 & 2 & 144 \\ \hline & & \end{array}$$

$$\begin{array}{r|l|l} & & 432 \\ \text{Ans. } 72 & 6 & 432 \\ \hline & & \end{array}$$

(21.)

$$\begin{array}{r|l|l} & & 126 \\ 84 & 1 & 84 \\ 84 & 2 & 42 \\ \hline & & \end{array}$$

$$\begin{array}{r|l|l} \text{Ans. } 42 & 11 & 462 \\ & & 462 \\ \hline & & \end{array}$$

(22.)

$$\begin{array}{r|l|l} & & 799 \\ 141 & 5 & 705 \\ 94 & 1 & 94 \\ 47 & 2 & 94 \\ \hline & & \end{array}$$

$$\begin{array}{r|l|l} \text{Ans. } 47 & 20 & 940 \\ & & 940 \\ \hline & & \end{array}$$

(23.)

$$\begin{array}{r|l|l} & & 10778 \\ 3281 & 3 & 9843 \\ 2805 & 3 & 935 \\ 476 & 1 & 476 \\ 459 & 1 & 459 \\ \hline \text{Ans. } 17 & 27 & 459 \end{array}$$

(24.)

$$\begin{array}{r|l|l} & & 14877 \\ 10353 & 1 & 10353 \\ 9048 & 2 & 4524 \\ 1305 & 3 & 3915 \\ 1218 & & 609 \\ \hline \text{Ans. } 87 & 7 & 609 \end{array}$$

(25.)

$$\begin{array}{r|l|l}
 & & 1116 \\
 620 & 1 & 620 \\
 \hline
 496 & 1 & 496 \\
 \hline
 124 & 4 & 496 \\
 \hline
 \end{array}$$

$$\begin{array}{r|l|l}
 \text{Ans. } 124 & 12 & 1488 \\
 & & 1488 \\
 \hline
 \end{array}$$

$$\begin{array}{r|l|l}
 & & 5184 \\
 396 & 13 & 5148 \\
 \hline
 396 & 11 & 36 \\
 \hline
 \end{array}$$

$$\begin{array}{r|l|l}
 & & 6914 \\
 36 & 192 & 6912 \\
 \hline
 36 & 18 & 2, \text{ Ans.} \\
 \hline
 \end{array}$$

(26.)

$$\begin{array}{r|l|l|l}
 2 & 18 & 24 & 40 \\
 \hline
 & 9 & 12 & 20 \\
 \hline
 \end{array}$$

2, G.C.D., Ans.

(27.)

$$\begin{array}{r|l|l}
 & & 3013 \\
 2231 & 1 & 2231 \\
 \hline
 1564 & 2 & 782 \\
 \hline
 667 & 1 & 667 \\
 \hline
 575 & 5 & 115 \\
 \hline
 92 & 1 & 92 \\
 \hline
 92 & 4 & 23 \\
 \hline
 \end{array}$$

23, G.C.D., Ans.

(28.)

$$\begin{array}{r|l|l}
 & & 812 \\
 336 & 2 & 672 \\
 \hline
 280 & 2 & 140 \\
 \hline
 56 & 2 & 112 \\
 \hline
 56 & 2 & 28, \text{ Ans.} \\
 \hline
 \end{array}$$

(29.)

G.C.D. of \$630, \$1134, and \$1386 = \$126.

$$\left. \begin{array}{l}
 \$630 \div \$126 = 5; \\
 \$1134 \div \$126 = 9; \\
 \$1386 \div \$126 = 11.
 \end{array} \right\} \text{Ans.}$$

Art. 96.

(2.)

$$14 = 2 \times 7$$

$$16 = 2 \times 2 \times 2 \times 2$$

$$18 = 2 \times 3 \times 3$$

$$2 \times 7 \times 2 \times 2 \times 2 \times 3 \times 3 = 1008, \text{ Ans.}$$

(3.)

$$27 = 3 \times 3 \times 3$$

$$36 = 3 \times 3 \times 3 \times 2$$

$$44 = 2 \times 2 \times 11$$

$$3 \times 3 \times 3 \times 2 \times 2 \times 11 = 1188, \text{ Ans.}$$

(4.)

$$16 = 2 \times 2 \times 2 \times 2$$

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$108 = 2 \times 2 \times 3 \times 3 \times 3$$

$$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 = 432, \text{ Ans.}$$

(5.)

$$14 = 2 \times 7$$

$$42 = 2 \times 7 \times 3$$

$$63 = 7 \times 3 \times 3$$

$$2 \times 7 \times 3 \times 3 = 126, \text{ Ans.}$$

(6.)

$$12 = 2 \times 2 \times 3$$

$$16 = 2 \times 2 \times 2 \times 2$$

$$18 = 2 \times 3 \times 3$$

$$20 = 2 \times 2 \times 5$$

$$2 \times 2 \times 3 \times 2 \times 2 \times 3 \times 5 = 720, \text{ Ans.}$$

(7.)

$$10 = 2 \times 5$$

$$45 = 5 \times 3 \times 3$$

$$75 = 5 \times 3 \times 5$$

$$90 = 2 \times 5 \times 3 \times 3$$

$$2 \times 5 \times 3 \times 3 \times 5 = 450, \text{ Ans.}$$

(8.)

2	144	180
2	72	90
3	36	45
3	12	15
	4	5

$$2 \times 2 \times 3 \times 3 \times 4 \times 5 = 720, \\ \text{Ans.}$$

(9.)

3	324	360
3	108	120
2	36	40
2	18	20
	9	10

$$3 \times 3 \times 2 \times 2 \times 9 \times 10 = 3240, \\ \text{Ans.}$$

(10.)

5	225	375
5	45	75
3	9	15
	3	5

$$5 \times 5 \times 3 \times 3 \times 5 = 1125, \text{ Ans.}$$

(11.)

2	16	40	96
2	8	20	48
2	4	10	24
2	2	5	12
	1	5	6

$$2 \times 2 \times 2 \times 2 \times 5 \times 6 = 480, \\ \text{Ans.}$$

(12.)

2	84	100	224
2	42	50	112
7	21	25	56
	3	25	8

$$2 \times 2 \times 7 \times 3 \times 25 \times 8 = 16800, \\ \text{Ans.}$$

(13.)

2	16	20	48	72
2	8	10	24	36
2	4	5	12	18
2	2	5	6	9
3	1	5	3	9
	1	5	1	3

$$2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 3 = 720, \\ \text{Ans.}$$

(14.)

5	25	60	100	125
5	5	12	20	25
2	1	12	4	5
2	1	6	2	5
	1	3	1	5

$$5 \times 5 \times 2 \times 2 \times 3 \times 5 = 1500,$$

Ans.

(15.)

7	7	15	21	25	35
5	1	15	3	25	5
3	1	3	3	5	1
	1	1	1	5	1

$$7 \times 5 \times 3 \times 5 = 525, \text{ } Ans.$$

(16.)

3	1	3	5	7	9
	1	1	5	7	3

$$3 \times 5 \times 7 \times 3 = 315, \text{ } Ans.$$

(17.)

3	5	3	4	6
2	5	1	4	2
	5	1	2	1

$$3 \times 2 \times 5 \times 2 = 60, \text{ } Ans.$$

(18.)

3	15	18	20
5	5	6	20
2	1	6	4
	1	3	2

$$3 \times 5 \times 2 \times 3 \times 2 = 180 \text{ ft.}, \text{ } Ans.$$

19. L.C.M. of 12, 16, 24, 32 = 96;

G.C.D. of the same = 4; $96 \times 4 = 384, \text{ } Ans.$

20. L.C.M. of 7, 42, 6, 9, 10, 630 = 630;

G.C.D. of 110, 140, 680 = 10; $630 \div 10 = 63, \text{ } Ans.$

(21.)

2	\$8	\$28	\$54	\$162
2	4	14	27	81
3	2	7	27	81
3	2	7	9	27
3	2	7	3	9
	2	7	1	3

$$2 \times 2 \times 3 \times 3 \times 3 \times 2 \times 7 \times 3 = \$4536, \text{ } Ans.$$

(22.)

2	36	48	80	144
2	18	24	40	72
2	9	12	20	36
2	9	6	10	18
3	9	3	5	9
3	3	1	5	3
	1	1	5	1

$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 720$ bushels, *Ans.*

(23.)

5	10	14	16	20
2	2	14	16	4
2	1	7	8	2
2	1	7	4	1
	1	7	2	1

$5 \times 2 \times 2 \times 2 \times 7 \times 2 = 560$ acres, *Ans.*

Art. 106.

2. $\frac{28}{36}$.	10. $\frac{7}{9}$.	17. $\frac{7}{9}$.	24. $\frac{373}{503}$.
3. $\frac{45}{63}$.	11. $\frac{2}{3}$.	18. $\frac{4}{9}$.	25. $\frac{21}{2} ; \frac{9}{13}$.
4. $\frac{49}{84}$.	12. $\frac{2}{3}$.	19. $\frac{3}{4}$.	26. $\frac{7}{8}$.
5. $\frac{55}{76}$.	13. $\frac{1}{8}$.	20. $\frac{71}{193}$.	27. $\frac{168}{252}$
6. $\frac{90}{108}$.	14. $\frac{2}{3}$.	21. $\frac{7}{8}$.	greater.
7. $\frac{168}{256}$.	15. $\frac{2}{11}$.	22. $\frac{19}{20}$.	28. $\frac{2}{3} ; \frac{7}{9} ; \frac{2}{3} ;$
9. $\frac{24}{25}$.	16. $\frac{17}{19}$.	23. $\frac{117}{265}$.	$\frac{9}{17}$.

Art. 108.

3. $\frac{175}{4}$ bu.	7. $\frac{384}{13}$.	10. $\frac{1467}{17}$.	13. $\frac{186517}{152}$.
4. $\frac{47}{3}$ yr.	8. $\frac{4037}{18}$.	11. $\frac{3012}{20}$.	14. $\frac{14274}{30}$.
5. $\frac{208}{7}$ wk.	9. $\frac{7693}{25}$.	12. $\frac{20887}{80}$.	15. $\frac{38034}{75}$.
6. $\frac{1248}{16}$ lb.			

Art. 110.

2. $61\frac{1}{6}$ lb.	6. $20\frac{7}{12}$.	10. 39.	14. $68\frac{1}{2}$.
3. $\$16\frac{7}{8}$.	7. 28.	11. $128\frac{3}{5}$.	15. $515\frac{4}{11}$.
4. $13\frac{1}{3}$ rd.	8. $56\frac{1}{2}\frac{3}{2}$.	12. $100\frac{1}{5}\frac{1}{9}$.	16. $676\frac{1}{4}$.
5. 93.	9. $56\frac{1}{2}\frac{1}{4}$.	13. 52.	

Art. 114.

2. $\frac{27}{63}; \frac{35}{63}$.	$\frac{35}{70}$.	11. $\frac{160}{168}$;	$\frac{140}{20}; \frac{36}{20}$.
3. $\frac{35}{60}; \frac{48}{60}$.	7. $\frac{39}{34}$;	$\frac{27}{168}$;	14. $\frac{360}{960}$;
4. $\frac{72}{168}$;	$\frac{52}{34}$;	$\frac{102}{168}$.	$\frac{200}{960}$;
$\frac{106}{168}$;	$\frac{36}{34}$.	12. $\frac{105}{140}$;	$\frac{210}{960}$;
$\frac{112}{168}$.	9. $\frac{42}{48}; \frac{33}{48}$;	$\frac{380}{140}$;	$\frac{2688}{960}$.
5. $\frac{21}{48}; \frac{32}{48}$;	$\frac{34}{48}$.	$\frac{84}{140}$;	
$\frac{12}{48}$.	10. $\frac{24}{78}; \frac{45}{78}$;	$\frac{238}{140}$.	
6. $\frac{63}{74}; \frac{50}{74}$;	$\frac{14}{78}$.	13. $\frac{125}{20}; \frac{7}{20}$;	

Art. 116.

- $\frac{4}{16} + \frac{7}{8} - 1\frac{1}{4} - \frac{3}{4} = \frac{31}{40}$, Ans.
- $\frac{19}{27} - \frac{1}{3} + \frac{2}{9} = \frac{4}{27}$, Ans.
- $14\frac{1}{2} + 9\frac{1}{8} - 25\frac{3}{4} - 16\frac{1}{3} = 14\frac{5}{24}$, Ans.
- $\$75\frac{3}{4} - (\$28\frac{7}{8} + \$27\frac{7}{16}) = \$19\frac{7}{16}$, Ans.

5. $\frac{1}{4} + \frac{3}{4} + \frac{5}{8} - \frac{9}{24} = \frac{7}{8}$, *Ans.*
6. $4\frac{5}{6} + 2\frac{3}{8} - 5\frac{1}{4} = 1\frac{3}{4}$, *Ans.*
7. $18 - 5\frac{1}{4} + 3\frac{1}{5} - \frac{7}{10} = 15\frac{1}{4}$, *Ans.*
8. $8\frac{1}{4} + \overline{12\frac{3}{5} - 11\frac{1}{4}} + \frac{1}{3}\frac{9}{5} = 10\frac{1}{4}$, *Ans.*
9. $\frac{1}{16} + 1\frac{1}{8} + 5\frac{1}{2} - 2\frac{5}{32} = 5\frac{5}{32}$, *Ans.*
10. $28\frac{1}{4} + 36\frac{5}{9} - (44 - 13\frac{1}{6}) = 33\frac{3}{5}$, *Ans.*
11. $86\frac{9}{10} - (50\frac{1}{8} + 15\frac{1}{5} - 6\frac{1}{2}) = 27\frac{2}{5}$, *Ans.*
12. $8\frac{1}{2} + \frac{3}{4} + 5\frac{1}{6} - 7\frac{8}{18} = 6\frac{3}{5}$, *Ans.*
13. $\$50 - (\$12\frac{2}{5} + \$17\frac{5}{8} + \$3\frac{7}{10}) = \$16\frac{1}{40}$, *Ans.*
14. $\frac{5}{12} + \frac{1}{5} + \frac{7}{20} = 1\frac{5}{30}$, *Ans.*
15. $\frac{3}{5} + \frac{7}{8} + \frac{9}{2} = 5\frac{3}{40}$, *Ans.*
16. $42 + 31\frac{5}{12} + 9\frac{7}{8} = 82\frac{2}{3}$, *Ans.*
17. $204\frac{7}{5} + 50\frac{1}{2} + 7\frac{8}{3} = 262\frac{6}{5}$, *Ans.*
18. $\frac{5}{8} - \frac{3}{11} = \frac{3}{88}$, *Ans.*
19. $1\frac{3}{4} - \frac{5}{6} = \frac{1}{12}$, *Ans.*
20. $2\frac{4}{5} - \frac{1}{5} = 1\frac{3}{5}$, *Ans.*
21. $16 - 3\frac{2}{11} = 12\frac{9}{11}$, *Ans.*
22. $71\frac{1}{8} - 63\frac{7}{9} = 7\frac{2}{9}$, *Ans.*
23. $106 - 95\frac{5}{12} = 10\frac{7}{12}$, *Ans.*
24. $(\$416\frac{3}{4} + \$184\frac{1}{2}) - (\$350\frac{2}{3} + \$136\frac{9}{16}) = \$114\frac{1}{8}$, *Ans.*
25. $46\frac{3}{4} + 64\frac{5}{8} + 76\frac{1}{2} = 187\frac{7}{8}$ yds. ;
 $\$127\frac{7}{8} + \$226\frac{5}{6} + \$312\frac{2}{3} = \$666\frac{1}{6}$.) *Ans.*
26. $\$25\frac{7}{8} - (\$6\frac{1}{2} + \$2\frac{1}{5} + \$\frac{3}{4}) = \$16\frac{1}{40}$, *Ans.*
27. $\$30 - (\$15\frac{3}{8} + \$9\frac{5}{12} + \$3\frac{7}{16}) = \$1\frac{3}{8}$, *Ans.*
28. $\overline{\frac{4}{3} + \frac{6}{4}} - \overline{\frac{3}{8} + \frac{5}{4}} = 1\frac{17}{8}$, *Ans.*

$$29. \ 8\frac{5}{6} + 2\frac{2}{3} - 5\frac{4}{11} = 6\frac{3}{22}, \text{ Ans.}$$

$$30. \ 48 - (16\frac{4}{7} - 3\frac{1}{2}) = 34\frac{13}{14}, \text{ Ans.}$$

$$31. \ 41\frac{1}{3} + \overline{56 + 21\frac{7}{30}} - 41\frac{1}{5} = 68\frac{11}{30}, \text{ Ans.}$$

$$32. \ \overline{120 - 51\frac{2}{9}} + \overline{90\frac{10}{27} - \frac{2}{3}} = 158\frac{3}{27}, \text{ Ans.}$$

$$33. \ 342 - (\overline{21\frac{3}{13}} + \frac{4}{5} - 9) = 329, \text{ Ans.}$$

Art. 120.

(7.)

$$\frac{9}{14} \times 12 = \begin{array}{r|l} 7 \ 14 & 9 \\ & 12^6 \\ \hline & 7 \ 54 = 7\frac{5}{7}, \text{ Ans.} \end{array}$$

(8.)

$$\frac{17}{83} \times 9 = \begin{array}{r|l} 7 \ 63 & 17 \\ & 9 \\ \hline & 7 \ 17 = 2\frac{3}{7}, \text{ Ans.} \end{array}$$

(9.)

$$\frac{7}{75} \times 15 = \begin{array}{r|l} 5 \ 75 & 7 \\ & 15 \\ \hline & 5 \ 7 = 1\frac{2}{5}, \text{ Ans.} \end{array}$$

(10.)

$$\frac{45}{120} \times 36 = \begin{array}{r|l} 2 \ 120 & 45^9 \\ & 36^3 \\ \hline & 2 \ 27 = 13\frac{1}{2}, \text{ Ans.} \end{array}$$

$$\begin{array}{rcl} & (11.) & \\ \frac{4}{102} \times 17 & = & \begin{array}{r|l} {}^3 102 & 4^2 \\ \hline & 17 \\ 3 & 2 = \frac{2}{3}, \text{ Ans.} \end{array} \end{array}$$

$$\begin{array}{rcl} & (12.) & \\ \frac{101}{32} \times 22 & = & \begin{array}{r|l} {}^6 132 & 101 \\ \hline & 22 \\ 6 & 101 = 16\frac{5}{6}, \text{ Ans.} \end{array} \end{array}$$

$$13. \quad 139 \times \frac{9}{13} = 139 \times 9 \div 13 = 96\frac{3}{13}, \text{ Ans.}$$

$$14. \quad 290 \times \frac{5}{6} = 290 \times 5 \div 6 = 241\frac{2}{3}, \text{ Ans.}$$

$$15. \quad 216 \times \frac{10}{13} = 216 \times 10 \div 13 = 166\frac{2}{13}, \text{ Ans.}$$

$$16. \quad 525 \times \frac{6}{27} = 525 \times 6 \div 27 = 116\frac{2}{3}, \text{ Ans.}$$

$$17. \quad 796 \times 9\frac{1}{8} = 7263\frac{1}{2}, \text{ Ans.}$$

$$18. \quad 2112 \times 10\frac{3}{5} = 22387\frac{1}{5}, \text{ Ans.}$$

$$\begin{array}{rcl} & (19.) & \\ \frac{7}{15} \times \frac{4}{9} & = & \begin{array}{r|l} 15 & 7 \\ 9 & 4 \\ \hline 135 & 28 = \frac{28}{135}, \text{ Ans.} \end{array} \end{array}$$

$$\begin{array}{rcl} & (20.) & \\ \frac{11}{12} \times \frac{9}{14} & = & \begin{array}{r|l} {}^4 12 & 11 \\ 14 & 9^3 \\ \hline 56 & 33 = \frac{33}{56}, \text{ Ans.} \end{array} \end{array}$$

$$\begin{array}{rcl} & (21.) & \\ \frac{9}{16} \times \frac{18}{27} & = & \begin{array}{r|l} {}^8 16 & 9 \\ 27 & 18^3 \\ \hline 8 & 3 = \frac{3}{8}, \text{ Ans.} \end{array} \end{array}$$

(22.)

$$1\frac{9}{14} \times \frac{7}{30} = \begin{array}{r|l} \begin{array}{l} 2 \ 14 \\ 3 \ 30 \\ \hline 6 \end{array} & \begin{array}{l} 10 \\ 7 \\ \hline 1 = \frac{1}{6}, \text{ Ans.} \end{array} \end{array}$$

(23.)

$$1\frac{5}{21} \times 1\frac{7}{3} = \begin{array}{r|l} \begin{array}{l} 7 \ 21 \\ 5 \ 25 \\ \hline 35 \end{array} & \begin{array}{l} 15 \\ 17 \\ \hline 17 = 1\frac{7}{35}, \text{ Ans.} \end{array} \end{array}$$

(24.)

$$1\frac{8}{9} \times \frac{7}{6} = \begin{array}{r|l} \begin{array}{l} 7 \ 49 \\ 9 \\ \hline 7 \end{array} & \begin{array}{l} 18^2 \\ 7 \\ \hline 2 = \frac{2}{7}, \text{ Ans.} \end{array} \end{array}$$

(25.)

$$\frac{3}{7} \times \frac{3}{4} = \begin{array}{r|l} \begin{array}{l} 7 \ 3 \\ 4 \ 3 \\ \hline 28 \end{array} & \begin{array}{l} 9 \\ \hline 9 = \frac{9}{28}, \text{ Ans.} \end{array} \end{array}$$

(26.)

$$1\frac{3}{4} \times \frac{5}{8} = \begin{array}{r|l} \begin{array}{l} 4 \ 7 \\ 8 \ 5 \\ \hline 32 \end{array} & \begin{array}{l} 7 \\ 5 \\ \hline 35 = 1\frac{3}{8}, \text{ Ans.} \end{array} \end{array}$$

(27.)

$$\frac{7}{10} \times 6\frac{1}{4} = \begin{array}{r|l} \begin{array}{l} 10 \\ 7 \\ \hline 10 \end{array} & \begin{array}{l} 7 \\ 43 \\ \hline 43 = 4\frac{3}{10}, \text{ Ans.} \end{array} \end{array}$$

(28.)

$$4\frac{1}{9} \times 1\frac{2}{3} = \begin{array}{r|l} 9 & 37 \\ 3 & 5 \\ \hline 27 & 185 \end{array} = 6\frac{23}{27}, \text{ Ans.}$$

$$29. 10 - \frac{4}{5} \text{ of } 3\frac{1}{4} = 10 - 2\frac{3}{5} = 7\frac{2}{5}, \text{ Ans.}$$

$$30. 6\frac{7}{8} + 2\frac{1}{2} \times \frac{5}{6} = \frac{55}{8} + \frac{5}{2} = 8\frac{3}{4}, \text{ Ans.}$$

$$31. \frac{15}{16} - \frac{1}{8} \text{ of } 2\frac{3}{4} = \frac{15}{16} - \frac{11}{16} = \frac{4}{16}, \text{ Ans.}$$

$$32. \frac{11}{12} \times \frac{4}{3} + 8\frac{7}{9} = \frac{11}{9} + 8\frac{8}{9} = 10, \text{ Ans.}$$

$$33. 2\frac{1}{4} \times \frac{5}{6} - \frac{3}{8} \text{ of } 1\frac{2}{3} = \frac{5}{6} - \frac{5}{8} = 1\frac{1}{4}, \text{ Ans.}$$

$$34. 16 - \frac{3}{10} \times 12\frac{2}{3} = 16 - 3\frac{2}{5} = 12\frac{1}{5}, \text{ Ans}$$

$$35. 4\frac{1}{8} + \frac{5}{4} \text{ of } 1\frac{1}{2} - \frac{7}{16} = \frac{33}{8} + \frac{15}{8} - \frac{7}{16} = 5\frac{9}{16}, \text{ Ans.}$$

$$36. \frac{18}{33} \text{ of } \frac{1}{9} + 2\frac{1}{3} \times 0 = \frac{2}{3} + 0 = \frac{2}{3}, \text{ Ans.}$$

(37.)

$$\$ \frac{3}{8} \times \frac{7}{9} = \begin{array}{r|l} 8 & 3 \\ 3 & 7 \\ \hline 24 & 7 \end{array} = \$ \frac{7}{24}, \text{ Ans.}$$

(38.)

$$6\frac{1}{2} \text{ cts.} \times 6\frac{1}{4} = \begin{array}{r|l} 2 & 13 \\ 4 & 25 \\ \hline 8 & 325 \end{array} = 40\frac{5}{8} \text{ cts., Ans.}$$

$$39. 37\frac{1}{2} \text{ cts.} \times 8\frac{3}{4} = \frac{75}{2} \times \frac{35}{4} = 328\frac{1}{8} \text{ cts., Ans.}$$

$$40. \$ \frac{1}{8} \times 21\frac{4}{5} = \$ \frac{1}{8} \times \frac{109}{5} = \$ 2\frac{23}{40}, \text{ Ans.}$$

$$41. \$ 7\frac{5}{8} \times 15 = \$ 7 \times 15 + \$ \frac{5}{8} \times 15 = \$ 114\frac{3}{8}, \text{ Ans.}$$

$$42. 28\frac{1}{2} \text{ cts.} \times 9\frac{3}{5} = \frac{57}{2} \times \frac{48}{5} = 273\frac{3}{5} \text{ cts., Ans.}$$

$$43. 18\frac{3}{4} \text{ cts.} \times 56 = 1050 \text{ cts.} = \$10.50, \text{ Ans.}$$

44. $47 \text{ cts.} \times \frac{2}{3} \text{ of } 5\frac{1}{2} = 47 \times 3\frac{2}{3} = 172\frac{1}{3} \text{ cts.} = \$1.72\frac{1}{3}, \text{ Ans.}$
45. $\frac{1}{2} \text{ of } 18\frac{3}{4} \text{ cts.} \times \frac{4}{5} \text{ of } 9 = \frac{18}{5} \times \frac{36}{5} = \frac{135}{2} = 67\frac{1}{2} \text{ cts., Ans.}$
46. $\$4\frac{5}{8} \times 15 = \overline{\$4 \times 15} + \overline{\$ \frac{5}{8} \times 15} = \$69\frac{3}{8}, \text{ Ans.}$
47. $\$ \frac{7}{8} \times 24\frac{3}{4} = \$ \frac{7}{8} \times \frac{99}{4} = \$ \frac{693}{2} = \$21\frac{3}{2}, \text{ Ans.}$
48. $\$4\frac{5}{16} \times 80 = \overline{\$4 \times 80} + \overline{\$ \frac{5}{16} \times 80} = \$345, \text{ Ans.}$
49. $\$ \frac{9}{16} \times 21\frac{3}{5} = \$ \frac{9}{16} \times \frac{108}{5} = \$12\frac{3}{20}, \text{ Ans.}$
50. $\$15\frac{3}{10} \times \frac{3}{4} \text{ of } 5\frac{1}{2} = \$15\frac{3}{10} \times \frac{33}{8} = \$63\frac{9}{80}, \text{ Ans.}$
51. $\$7\frac{4}{5} \times 18\frac{2}{3} = \$ \frac{39}{5} \times \frac{56}{3} = \$145\frac{2}{3}, \text{ Ans.}$
52. $\frac{3}{4} \text{ of } \$5 \times \frac{1}{3} \text{ of } 18\frac{1}{2} = \$ \frac{15}{4} \times \frac{37}{6} = \$23\frac{1}{6}, \text{ Ans.}$
53. $9\frac{1}{4} \text{ cts.} \times 126 = \$11.65\frac{1}{2}, \text{ Ans.}$
54. $\$62\frac{1}{2} \times 36\frac{7}{10} = \$2293\frac{3}{4}, \text{ Ans.}$
55. $\$205\frac{3}{5} \times 35 = \$7196, \text{ Ans.}$
56. $\frac{5}{6} \text{ of } \$54\frac{9}{10} \times \frac{4}{5} \text{ of } 156\frac{2}{3} = \$ \frac{183}{4} \times \frac{376}{3} = \$5734, \text{ Ans.}$
57. $\$1\frac{2}{3} \times 28\frac{5}{8} = \$ \frac{5}{3} \times \frac{239}{8} = \$47\frac{17}{4}, \text{ Ans.}$
58. $\$ \frac{13}{20} \times \frac{5}{8} = \$ \frac{13}{4} \times \frac{1}{8} = \$ \frac{13}{32}, \text{ Ans.}$
59. $\$125 \times \frac{9}{40} = \$125 \times 9 \div 40 = \$28\frac{1}{8}, \text{ Ans.}$
60. $\$26\frac{4}{5} \times 7\frac{9}{20} = \$ \frac{134}{5} \times \frac{149}{20} = \$199\frac{33}{20}, \text{ Ans.}$
61. $\$365\frac{7}{8} \times \frac{4}{5} = \$292\frac{28}{40}; \$365\frac{7}{8} - \$292\frac{28}{40} = \$73\frac{7}{40}, \text{ Ans.}$
62. $\$ \frac{7}{8} \times 126\frac{3}{4} = \$ \frac{7}{8} \times \frac{507}{4} = \$110\frac{9}{2}, \text{ Ans.}$
63. $\frac{2}{3} \text{ of } \$7\frac{1}{4} \times \frac{4}{5} \text{ of } 6\frac{1}{2} = \$ \frac{29}{6} \times \frac{26}{5} = \$25\frac{2}{15}, \text{ Ans.}$
64. $1\frac{1}{4} \times 5 \times 4\frac{9}{10} = \frac{5}{4} \times \frac{5}{1} \times \frac{49}{10} = 30\frac{5}{8} \text{ lb., Ans.}$
65. $\frac{472}{9} \times \frac{895}{144} + \frac{2365}{18} = 424\frac{46}{81}, \text{ Ans.}$

Art. 124.

$$\frac{36}{43} \div 18 = \begin{array}{r|l} 43 & 36^2 \\ 18 & \\ \hline 43 & 2 = \frac{2}{43}, \text{ Ans.} \end{array}$$

$$\frac{27}{12} \div 10 = \begin{array}{r|l} 12 & 27^9 \\ 10 & \\ \hline 40 & 9 = \frac{9}{40}, \text{ Ans.} \end{array}$$

$$\frac{3}{30} \div 14 = \begin{array}{r|l} 30 & 3 \\ 14 & \\ \hline 210 & 1 = \frac{1}{210}, \text{ Ans.} \end{array}$$

$$56 \div 1\frac{5}{9} = \begin{array}{r|l} 9 & 56^4 \\ 14 & 9 \\ \hline & 36, \text{ Ans.} \end{array}$$

$$1\frac{28}{35} \div 80 = \begin{array}{r|l} 35 & 135^{128} \\ 80 & 80 \\ \hline 675 & 8 = \frac{8}{675}, \text{ Ans.} \end{array}$$

$$11\frac{4}{11} \div 3\frac{5}{2} = \begin{array}{r|l} 2 & 114^{105} \\ 5 & 52 \\ \hline 91 & 156 = 1\frac{5}{7}, \text{ Ans.} \end{array}$$

(13.)

$$73\frac{3}{4} \div 10 = \begin{array}{r|l} 4 & 295^{59} \\ 2 & 10 \\ \hline 8 & 59 = 7\frac{3}{8}, \text{ Ans.} \end{array}$$

(14.)

$$125\frac{5}{7} \div 20 = \begin{array}{r|l} 20 & 125 \\ \hline & 6\frac{5}{7}, \text{ Ans.} \end{array}$$

(15.)

$$236\frac{1}{8} \div 16 = \begin{array}{r|l} 16 & 236\frac{1}{8} \\ \hline & 14\frac{97}{128}, \text{ Ans.} \end{array}$$

(16.)

$$\frac{3}{10} \div \frac{11}{24} = \begin{array}{r|l} 5 & 10 & 3 \\ 11 & 24^{12} \\ \hline 55 & 36 = 3\frac{6}{5}, \text{ Ans.} \end{array}$$

(17.)

$$45\frac{3}{4} \div 8 = \begin{array}{r|l} 4 & 183 \\ 8 & \\ \hline 32 & 183 = 5\frac{23}{32}, \text{ Ans.} \end{array}$$

(18.)

$$92 \div 5\frac{1}{6} = \begin{array}{r|l} & 92 \\ 31 & 6 \\ \hline 31 & 552 = 17\frac{25}{31}, \text{ Ans.} \end{array}$$

(19.)

$$\frac{1}{4} \text{ of } 30 \div 12 = \begin{array}{r|l} 4 & 30^5 \\ 2 & 12 \\ \hline 8 & 5 = \frac{5}{8}, \text{ Ans.} \end{array}$$

(20.)

$$\frac{4}{5} \text{ of } 142 \div 15 = \begin{array}{r|l} 5 & 4 \\ 15 & 142 \\ \hline 75 & 568 = 7\frac{4}{5}, \text{ Ans.} \end{array}$$

(21.)

$$\frac{5}{6} \text{ of } 8 \div 20 = \begin{array}{r|l} 3 & 5 \\ 20 & 8 \\ \hline 3 & 1 = \frac{1}{3}, \text{ Ans.} \end{array}$$

(22.)

$$16\frac{1}{2} \div 13\frac{1}{5} = \begin{array}{r|l} 2 & 33 \\ 2 & 5 \\ \hline 4 & 5 = 1\frac{1}{4}, \text{ Ans.} \end{array}$$

(23.)

$$\frac{9}{10} \text{ of } 4 \div \frac{5}{6} \text{ of } 3\frac{1}{4} = \begin{array}{r|l} 5 & 10 \\ 5 & 6 \\ 13 & 4^2 \\ \hline 325 & 432 \\ \hline & 1\frac{10}{32}\frac{7}{5}, \text{ Ans.} \end{array}$$

(24.)

$$44 \div \frac{2}{3} \text{ of } 5\frac{1}{2} \times 7 = \begin{array}{r|l} & 44^4 \\ 7 & 3 \\ \hline 7 & 12 = 1\frac{5}{7}, \text{ Ans.} \end{array}$$

$$25. \ 29\frac{5}{16} \div 14 = 2\frac{3}{32} \text{ rd., Ans.}$$

$$26. \ 8\frac{8}{9} \div 1\frac{1}{3} = 8\frac{2}{3}, \text{ Ans.}$$

$$27. \$6270 \div \frac{3}{5} = \$10450, \text{ Ans.}$$

$$28. \$63 \div \frac{3}{7} = \$147, \text{ Ans.}$$

$$29. \$4622\frac{2}{5} \div 54 = \$85\frac{3}{5}, \text{ Ans.}$$

$$30. \$124\frac{3}{4} \div 12 = \$10\frac{19}{8}, \text{ Ans.}$$

$$31. \begin{cases} \$40 \div \$3\frac{2}{5} = 11\frac{1}{7} \text{ cd.;} \\ \$150 \div \$3\frac{2}{5} = 44\frac{2}{7} \text{ cd.} \end{cases} \text{ Ans.}$$

$$32. \begin{cases} \$18 \div \$\frac{5}{6} = 21\frac{3}{5} \text{ bu.;} \\ \$39 \div \$\frac{5}{6} = 46\frac{4}{5} \text{ bu.} \end{cases} \text{ Ans.}$$

(33.)

$$\frac{5}{8} \div \frac{3}{4} = \begin{array}{r|l} 2 & 5 \\ & 3 \end{array} \begin{array}{l} 5 \\ 4 \end{array} \\ \hline 6 \quad 5 = \frac{5}{6}, \text{ Ans.}$$

(34.)

$$\frac{9}{10} \div \frac{3}{5} = \begin{array}{r|l} 2 & 9 \\ & 3 \end{array} \begin{array}{l} 10 \\ 5 \end{array} \\ \hline 2 \quad 3 = 1\frac{1}{2}, \text{ Ans.}$$

(35.)

$$\frac{3}{5} \div \frac{6}{7} = \begin{array}{r|l} 5 & 3 \\ 2 & 6 \end{array} \begin{array}{l} 7 \\ 7 \end{array} \\ \hline 10 \quad 7 = \frac{7}{10}, \text{ Ans.}$$

(36.)

$$\frac{4}{14} \div \frac{6}{7} = \begin{array}{r|l} 14 & 4 \\ 3 & 6 \end{array} \begin{array}{l} 7 \\ 7 \end{array} \\ \hline 3 \quad 1 = \frac{1}{3}. \text{ Ans.}$$

$$(37.)$$

$$\frac{1\frac{2}{5}}{2\frac{5}{5}} \div \frac{9}{10} = \begin{array}{r|l} \begin{array}{r} 5\ 25 \\ 3\ 9 \\ \hline 15 \end{array} & \begin{array}{r} 12\ 4 \\ 10\ 2 \\ \hline 8 \end{array} \end{array} = \frac{8}{15}, \text{ Ans.}$$

$$(38.)$$

$$\frac{7}{36} \div \frac{14}{27} = \begin{array}{r|l} \begin{array}{r} 4\ 36 \\ 2\ 14 \\ \hline 8 \end{array} & \begin{array}{r} 7 \\ 27\ 3 \\ \hline 3 \end{array} \end{array} = \frac{3}{8}, \text{ Ans.}$$

$$(39.)$$

$$\frac{20}{21} \div \frac{1}{2} \text{ of } \frac{4}{5} = \begin{array}{r|l} \begin{array}{r} 21 \\ 1 \\ 4 \\ \hline 21 \end{array} & \begin{array}{r} 20\ 5 \\ 2 \\ 5 \\ \hline 50 \end{array} \end{array} = 2\frac{8}{11}, \text{ Ans.}$$

$$(40.)$$

$$\frac{24}{63} \div \frac{2}{3} \text{ of } 1\frac{5}{9} = \begin{array}{r|l} \begin{array}{r} 7\ 63 \\ 2 \\ 7\ 14 \\ \hline 49 \end{array} & \begin{array}{r} 24\ 6 \\ 3 \\ 9 \\ \hline 18 \end{array} \end{array} = \frac{18}{49}, \text{ Ans.}$$

$$(41.)$$

$$\frac{1}{2} \text{ of } \frac{3}{4} \div \frac{7}{8} = \begin{array}{r|l} \begin{array}{r} 8 \\ 7 \\ \hline 7 \end{array} & \begin{array}{r} 3 \\ 8 \\ \hline 3 \end{array} \end{array} = \frac{3}{7}, \text{ Ans.}$$

$$(42.)$$

$$\frac{4}{5} \text{ of } \frac{5}{8} \div \frac{7}{20} = \begin{array}{r|l} \begin{array}{r} 5 \\ 8 \\ 7 \\ \hline 7 \end{array} & \begin{array}{r} 4 \\ 5 \\ 20\ 10 \\ \hline 10 \end{array} \end{array} = 1\frac{3}{7}, \text{ Ans.}$$

(43.)

$$4\frac{1}{5} \div \frac{1}{7} \text{ of } \frac{2}{3} = \begin{array}{r|l} 5 & 15 \\ & 1 \quad 7 \\ & 2 \quad 3 \\ \hline & 10 \quad 77 = 7\frac{7}{10}, \text{ Ans.} \end{array}$$

(44.)

$$9\frac{1}{6} \div \frac{1}{2} \text{ of } 5 = \begin{array}{r|l} 2 & 6 \\ & 55 \quad 11 \\ & 1 \quad 2 \\ & 5 \\ \hline & 3 \quad 11 = 3\frac{2}{3}, \text{ Ans.} \end{array}$$

(45.)

$$4\frac{5}{7} \div 2\frac{3}{4} = \begin{array}{r|l} 7 & 33 \quad 3 \\ & 11 \quad 4 \\ \hline & 7 \quad 12 = 1\frac{5}{7}, \text{ Ans.} \end{array}$$

(46.)

$$12\frac{2}{10} \div \frac{1}{3} \text{ of } 6\frac{3}{4} = \begin{array}{r|l} 5 & 10 \\ & 1 \quad 3 \\ & 3 \quad 27 \\ & 27 \quad 4 \quad 2 \\ \hline & 15 \quad 86 = 5\frac{11}{5}, \text{ Ans.} \end{array}$$

(47.)

$$\frac{3}{4} \text{ of } 26\frac{2}{3} \div 2\frac{6}{7} = \begin{array}{r|l} 4 & 3 \\ & 3 \quad 80 \\ & 20 \quad 7 \\ \hline & 1 \quad 7 = 7, \text{ Ans.} \end{array}$$

(48.)

$$\begin{array}{r} \$15\frac{1}{3} \div \$1\frac{1}{8} = \end{array} \begin{array}{r} 3 \overline{) 46} \\ 9 \\ \hline 27 \overline{) 368} = 13\frac{17}{27} \text{ lb., } Ans. \end{array}$$

$$49. \quad \begin{array}{l} \$160 \div \$6\frac{2}{3} = 24 \text{ tons;} \\ \$248 \div \$6\frac{2}{3} = 37\frac{1}{3} \text{ tons.} \end{array} \left. \vphantom{\begin{array}{l} \$160 \\ \$248 \end{array}} \right\} Ans.$$

$$50. \quad \begin{array}{l} \$9 \div \$1\frac{1}{2} = 9\frac{2}{11} \text{ yd.;} \\ \$24 \div \$1\frac{1}{2} = 26\frac{2}{11} \text{ yd.;} \\ \$64 \div \$1\frac{1}{2} = 69\frac{2}{11} \text{ yd.} \end{array} \left. \vphantom{\begin{array}{l} \$9 \\ \$24 \\ \$64 \end{array}} \right\} Ans.$$

$$51. \quad \$110 \div \$\frac{3}{8} = 293\frac{1}{3} \text{ lb., } Ans.$$

(53.)

$$\begin{array}{r} \frac{7}{\frac{3}{4}} = 7 \div \frac{3}{4} = \end{array} \begin{array}{r} 2 \overline{) 7} \\ 3 \\ \hline 6 \overline{) 7} = 1\frac{1}{6}, \text{ } Ans. \end{array}$$

(54.)

$$\begin{array}{r} \frac{2\frac{1}{4}}{3\frac{3}{5}} = 2\frac{1}{4} \div 3\frac{3}{5} = \end{array} \begin{array}{r} 4 \overline{) 9} \\ 2 \overline{) 8} \\ \hline 8 \overline{) 5} = \frac{5}{8}, \text{ } Ans. \end{array}$$

(55.)

$$\begin{array}{r} \frac{15}{12\frac{1}{2}} = 15 \div 12\frac{1}{2} = \end{array} \begin{array}{r} 1 \overline{) 15}^3 \\ 2 \overline{) 25} \\ \hline 5 \overline{) 6} = 1\frac{1}{5}, \text{ } Ans. \end{array}$$

(56.)

$$\begin{array}{r} \frac{3}{\frac{2}{3}} = 3 \div \frac{2}{3} = \end{array} \begin{array}{r} 3 \overline{) 3} \\ 2 \overline{) 9} = 4\frac{1}{2}, \text{ } Ans. \end{array}$$

(57.)

$$\frac{\frac{2}{3} \text{ of } \frac{11}{12}}{\frac{1}{18} \text{ of } 5\frac{1}{2}} = \frac{22}{36} \div \frac{11}{36} = \begin{array}{r|l} \cancel{36} & 22^2 \\ \cancel{11} & \cancel{36} \\ \hline 1 & 2 = 2, \text{ Ans.} \end{array}$$

(58.)

$$\frac{\frac{3}{4} \text{ of } 2\frac{1}{3}}{\frac{9}{10}} = \frac{21}{12} \div \frac{9}{10} = \begin{array}{r|l} \overset{6}{\cancel{12}} & 21^7 \\ \overset{3}{\cancel{9}} & \cancel{10}^5 \\ \hline 18 & 35 = 1\frac{7}{3}, \text{ Ans.} \end{array}$$

(59.)

$$12\frac{2}{3} \div \frac{5}{7} = \begin{array}{r|l} 3 & 38 \\ 5 & 7 \\ \hline 15 & 266 = 17\frac{1}{3} \text{ da., Ans.} \end{array}$$

(60.)

$$\$40\frac{3}{4} \div \$6\frac{1}{8} = \begin{array}{r|l} \cancel{4} & 163 \\ 49 & \$^2 \\ \hline 49 & 326 = 6\frac{3}{4} \text{ bu., Ans.} \end{array}$$

(61.)

$$\frac{1}{2} \text{ of } \$\frac{3}{4} \div \frac{1}{4} \text{ of } \$\frac{7}{8} = \begin{array}{r|l} \$ & 3 \\ 7 & \cancel{32}^4 \\ \hline 7 & 12 = 1\frac{5}{7} \text{ yd., Ans.} \end{array}$$

$$62. \quad \frac{3}{4} + \frac{2}{5} = 1\frac{3}{20};$$

$$\frac{3}{4} - \frac{2}{5} = \frac{7}{20};$$

$$\frac{3}{4} \times \frac{2}{5} = \frac{3}{10};$$

$$\frac{3}{4} \div \frac{2}{5} = 1\frac{1}{8}.$$

$$63. \quad \frac{7}{8} + \frac{4}{5} = 1\frac{27}{40};$$

$$\frac{7}{8} - \frac{4}{5} = \frac{3}{40};$$

$$\frac{7}{8} \times \frac{4}{5} = \frac{7}{10};$$

$$\frac{7}{8} \div \frac{4}{5} = 1\frac{3}{2}.$$

$$64. \frac{5}{6} + \frac{6}{7} = 1\frac{29}{42};$$

$$\frac{6}{7} - \frac{5}{6} = \frac{1}{42};$$

$$\frac{5}{6} \times \frac{6}{7} = \frac{5}{7};$$

$$\frac{5}{6} \div \frac{6}{7} = \frac{35}{36}.$$

$$65. \frac{11}{24} + \frac{2}{9} = 1\frac{3}{2};$$

$$\frac{11}{24} - \frac{2}{9} = 1\frac{1}{2};$$

$$\frac{11}{24} \times \frac{2}{9} = \frac{11}{108};$$

$$\frac{11}{24} \div \frac{2}{9} = 2\frac{1}{6}.$$

$$66. \frac{2}{3} + \frac{27}{28} = 1\frac{53}{4};$$

$$\frac{27}{28} - \frac{2}{3} = \frac{25}{84};$$

$$\frac{2}{3} \times \frac{27}{28} = \frac{9}{14};$$

$$\frac{2}{3} \div \frac{27}{28} = \frac{56}{81}.$$

$$67. \frac{7}{16} + \frac{5}{6} = 1\frac{13}{8};$$

$$\frac{5}{6} - \frac{7}{16} = \frac{13}{48};$$

$$\frac{7}{16} \times \frac{5}{6} = \frac{35}{96};$$

$$\frac{7}{16} \div \frac{5}{6} = \frac{21}{40}.$$

$$68. \frac{14}{15} + \frac{7}{10} = 1\frac{19}{30};$$

$$\frac{14}{15} - \frac{7}{10} = \frac{7}{30};$$

$$\frac{14}{15} \times \frac{7}{10} = \frac{49}{75};$$

$$\frac{14}{15} \div \frac{7}{10} = 1\frac{1}{3}.$$

$$69. \frac{4}{15} + \frac{5}{24} = 1\frac{7}{20};$$

$$\frac{4}{15} - \frac{5}{24} = 1\frac{7}{20};$$

$$\frac{4}{15} \times \frac{5}{24} = \frac{1}{6};$$

$$\frac{4}{15} \div \frac{5}{24} = 1\frac{7}{5}.$$

$$70. \frac{45}{8} + \frac{2}{3} = 5\frac{7}{4};$$

$$\frac{45}{8} - \frac{2}{3} = 3\frac{2}{4};$$

$$\frac{45}{8} \times \frac{2}{3} = 3\frac{1}{2};$$

$$\frac{45}{8} \div \frac{2}{3} = 61\frac{5}{16}.$$

$$71. 3\frac{1}{4} + \frac{3}{4} = 4;$$

$$3\frac{1}{4} - \frac{3}{4} = 2\frac{1}{2};$$

$$3\frac{1}{4} \times \frac{3}{4} = 2\frac{7}{16};$$

$$3\frac{1}{4} \div \frac{3}{4} = 4\frac{1}{4}.$$

$$72. 3\frac{1}{2} + 2\frac{1}{3} = 5\frac{5}{6};$$

$$3\frac{1}{2} - 2\frac{1}{3} = 1\frac{1}{6};$$

$$3\frac{1}{2} \times 2\frac{1}{3} = 8\frac{1}{6};$$

$$3\frac{1}{2} \div 2\frac{1}{3} = 1\frac{1}{2}.$$

$$73. \frac{45}{7} + 2\frac{3}{4} = 7\frac{13}{8};$$

$$\frac{45}{7} - 2\frac{3}{4} = 1\frac{27}{8};$$

$$\frac{45}{7} \times 2\frac{3}{4} = 12\frac{27}{8};$$

$$\frac{45}{7} \div 2\frac{3}{4} = 1\frac{5}{7}.$$

$$74. \frac{5}{9} + 2\frac{1}{2} = 3\frac{1}{18};$$

$$2\frac{1}{2} - \frac{5}{9} = 1\frac{7}{18};$$

$$\frac{5}{9} \times 2\frac{1}{2} = 1\frac{7}{18};$$

$$\frac{5}{9} \div 2\frac{1}{2} = \frac{2}{9}.$$

$$75. 5\frac{1}{3} + 8 = 13\frac{1}{3};$$

$$8 - 5\frac{1}{3} = 2\frac{2}{3};$$

$$5\frac{1}{3} \times 8 = 42\frac{2}{3};$$

$$5\frac{1}{3} \div 8 = \frac{2}{3}.$$

$$76. 21\frac{3}{5} + \frac{9}{16} = 22\frac{13}{80};$$

$$21\frac{3}{5} - \frac{9}{16} = 21\frac{3}{80};$$

$$21\frac{3}{5} \times \frac{9}{16} = 12\frac{3}{20};$$

$$21\frac{3}{5} \div \frac{9}{16} = 38\frac{2}{5}.$$

77. $24\frac{3}{4} + \frac{1}{8} = 25\frac{5}{8};$

$24\frac{3}{4} - \frac{1}{8} = 23\frac{7}{8};$

$24\frac{3}{4} \times \frac{1}{8} = 21\frac{3}{8};$

$24\frac{3}{4} \div \frac{1}{8} = 28\frac{2}{7}.$

78. $28\frac{5}{8} + 1\frac{2}{3} = 30\frac{7}{24};$

$28\frac{5}{8} - 1\frac{2}{3} = 26\frac{23}{24};$

$28\frac{5}{8} \times 1\frac{2}{3} = 47\frac{17}{24};$

$28\frac{5}{8} \div 1\frac{2}{3} = 17\frac{7}{40}.$

79. $62\frac{1}{2} + 36\frac{7}{10} = 99\frac{1}{5};$

$62\frac{1}{2} - 36\frac{7}{10} = 25\frac{4}{5};$

$62\frac{1}{2} \times 36\frac{7}{10} = 2293\frac{3}{4};$

$62\frac{1}{2} \div 36\frac{7}{10} = 1\frac{258}{367}.$

80. $16\frac{1}{2} + 13\frac{1}{5} = 29\frac{7}{10};$

$16\frac{1}{2} - 13\frac{1}{5} = 3\frac{3}{10};$

$16\frac{1}{2} \times 13\frac{1}{5} = 217\frac{4}{5};$

$16\frac{1}{2} \div 13\frac{1}{5} = 1\frac{1}{4}.$

81. $3\frac{1}{2} + \frac{4}{5} \text{ of } 2\frac{1}{2} = 5\frac{1}{2};$

$3\frac{1}{2} - \frac{4}{5} \text{ of } 2\frac{1}{2} = 1\frac{1}{2};$

$3\frac{1}{2} \times \frac{4}{5} \text{ of } 2\frac{1}{2} = 7;$

$3\frac{1}{2} \div \frac{4}{5} \text{ of } 2\frac{1}{2} = 1\frac{3}{4}.$

82. $9\frac{1}{2} + \frac{1}{2} \text{ of } 7 = 13;$

$9\frac{1}{2} - \frac{1}{2} \text{ of } 7 = 6;$

$9\frac{1}{2} \times \frac{1}{2} \text{ of } 7 = 33\frac{1}{4};$

$9\frac{1}{2} \div \frac{1}{2} \text{ of } 7 = 2\frac{5}{7}.$

83. $\frac{1}{3} + \frac{2}{9} \text{ of } 4\frac{1}{2} = 1\frac{1}{3};$

$\frac{2}{9} \text{ of } 4\frac{1}{2} - \frac{1}{3} = \frac{2}{3};$

$\frac{1}{3} \times \frac{2}{9} \text{ of } 4\frac{1}{2} = \frac{1}{3};$

$\frac{1}{3} \div \frac{2}{9} \text{ of } 4\frac{1}{2} = \frac{1}{3}.$

84. $\frac{2\frac{1}{4}}{3\frac{3}{8}} + \frac{\frac{5}{9}}{2\frac{1}{2}} = \frac{6\frac{1}{2}}{7\frac{1}{2}};$

$\frac{2\frac{1}{4}}{3\frac{3}{8}} - \frac{\frac{5}{9}}{2\frac{1}{2}} = \frac{2\frac{2}{3}}{7\frac{1}{2}};$

$\frac{2\frac{1}{4}}{3\frac{3}{8}} \times \frac{\frac{5}{9}}{2\frac{1}{2}} = \frac{5}{36};$

$\frac{2\frac{1}{4}}{3\frac{3}{8}} \div \frac{\frac{5}{9}}{2\frac{1}{2}} = 2\frac{13}{16}.$

Art. 127.

1. $\frac{525}{25}; 1\frac{700}{50}; 1\frac{350}{18}, Ans.$

2. $\frac{15}{40}; \frac{24}{40}; \frac{65}{40}, Ans.$

3. $\frac{17}{28} + 9\frac{1}{4} = 10\frac{5}{8}, Ans.$

4. $56\frac{2}{3} \div 12\frac{1}{2} = 4\frac{8}{15}, Ans.$

5. $\frac{9}{28} \times \frac{2}{3} = \frac{3}{14}, Ans.$

6. $\frac{77}{10} - \frac{62}{15} = 3\frac{17}{30}, Ans.$

7. $\frac{4}{1} \div \frac{1}{5} = 20;$

$\frac{5}{2} \div \frac{4}{3} = 1\frac{1}{6}, Ans.$

8. $\frac{1}{5} + \frac{1}{4} = \frac{9}{20}; 77 \text{ bu. is } \frac{11}{20};$

77 is $\frac{11}{20}$ of 20 times $\frac{1}{11}$ of 77, or 140 bu., *Ans.*

9. $\$.33 \div 3\frac{2}{3} \times 62\frac{1}{2} = \$5.89\frac{1}{2}$, *Ans.*
10. $\frac{1}{3}$ of $\frac{2}{5} = \frac{2}{15}$; $\$540\frac{3}{4} \div 2 \times 15 = \$4055\frac{5}{8}$, *Ans.*
11. $\$1729\frac{1}{2} \div 3 \times 8 = \4612 , *Ans.*
12. $\frac{75}{150}$ of $\$150 = \frac{1}{2}$ of $\$150$, *Ans.*
13. $\frac{160}{45}$ of $\$275 = \frac{32}{9}$ of $\$275$, *Ans.*
14. $\frac{1}{6} + \frac{1}{4} = \frac{5}{12}$; 35 ft. $= \frac{7}{12}$, and $\frac{12}{12} = 60$ ft., *Ans.*
15. $\$6\frac{1}{2} \div \$\frac{2}{3} = \$1\frac{3}{2} \times \frac{3}{2} = \$17\frac{1}{2}$, *Ans.*
16. $18\frac{3}{4} = \frac{150}{8}$; $2\frac{1}{8} = \frac{23}{8}$; hence, $2\frac{1}{8}$ is $\frac{23}{150}$ of $18\frac{3}{4}$, *Ans.*
17. $48 \times \frac{8}{5} \times \frac{3}{4} = 57\frac{3}{5}$, *Ans.*
18. $\$78 \div (\$120 \div 7\frac{1}{2}) = 4\frac{1}{2}$ tons, *Ans.*
19. 36 cts. $\times 6\frac{2}{3} \div 3\frac{1}{5} = \$.75$, *Ans.*
20. $\$79\frac{1}{4} \times \frac{10}{3} = \$264\frac{1}{2} = \$264\frac{1}{2}$, *Ans.*
21. $12\frac{4}{5} \times 2\frac{1}{2} - 20\frac{3}{4} = 11\frac{1}{4}$, *Ans.*
22. $\$10\frac{5}{6} \div \$\frac{7}{9} = 13\frac{13}{14}$ yd., *Ans.*
23. $\frac{1}{3} + \frac{8}{7} = 2\frac{1}{21}$; $\frac{8}{7} - \frac{1}{3} = \frac{15}{21}$; $\frac{1}{3} \times \frac{8}{7} = 1$, *Ans.*
24. $\$ \frac{9}{10} \times 10\frac{1}{2} \div \$\frac{7}{8} = 10\frac{4}{5}$ lb., *Ans.*
25. A does $\frac{1}{8}$ in 1 da.; B does $\frac{1}{6}$ in 1 da.;
both do $\frac{1}{8} + \frac{1}{6} = \frac{7}{24}$; $\frac{24}{7} \div \frac{7}{24} = 3\frac{3}{7}$ da., *Ans.*
26. $\$270 \div 9 \times 4 = \120 , cost of wagon, *Ans.*
27. $\$156 \div (\$60 \div 7\frac{1}{2}) = 19\frac{1}{2}$ bbl., *Ans.*
28. $\frac{3}{2} \div \frac{2}{3} = \frac{3}{2} \times \frac{3}{2} = \frac{9}{4} = 2\frac{1}{4}$, *Ans.*
29. $\frac{2}{7} + \frac{1}{4} + \frac{3}{14} = \frac{21}{28}$; $\$30 = \frac{7}{8}$; $\$30 \div 7 \times 28 = \120 , *Ans.*
30. $\frac{3}{4}$ of $1\frac{1}{2} \div \frac{1}{4}$ of $\frac{2}{3} = 7\frac{1}{2}$ times, *Ans.*
31. $\frac{7+5}{8+5} = \frac{12}{13}$; $\frac{12}{13} - \frac{7}{8} = \frac{5}{104}$ increased, *Ans.*
32. $\frac{8+5}{7+5} = \frac{13}{12}$; $\frac{7}{8} - \frac{13}{12} = \frac{5}{24}$ diminished, *Ans.*

$$33. \$4725\frac{3}{8} \div 235\frac{1}{2} \times 628 = \$12601, \text{ Ans.}$$

$$34. 100\frac{7}{8} \text{ tons} - 40\frac{3}{4} \text{ tons} = 60\frac{1}{8} \text{ tons};$$

$$\$42\frac{1}{2} \times 40\frac{3}{4} = \$1731\frac{7}{8}$$

$$\$40\frac{1}{4} \times 60\frac{1}{8} = \$2420\frac{1}{32}$$

$$\$4151\frac{3}{32}, \text{ Ans.}$$

$$35. \frac{4}{5} \text{ of } \frac{5}{8} = \frac{1}{2} \text{ the whole foundry};$$

$$\$2570\frac{3}{4} \times 2 = \$5141\frac{1}{2}, \text{ Ans.}$$

$$36. (\$2\frac{1}{4} \times 320) + (\$1\frac{7}{8} \times 435) = \$1535\frac{5}{8};$$

$$(\$1\frac{3}{4} \times 302) + (\$2\frac{1}{8} \times 453) = \$1491\frac{1}{8};$$

$$\$44\frac{1}{2} \text{ lost, Ans.}$$

$$37. (\frac{5}{9} \text{ of } \frac{1}{4}^5 + 8\frac{2}{3}) \div 3\frac{1}{2} = 10\frac{3}{4} \div 3\frac{1}{2} = 3\frac{1}{3}\frac{8}{7}, \text{ Ans.}$$

$$38. (\frac{18}{5} \div 15) \times (15 \div \frac{9}{14}) = \frac{1}{5}\frac{8}{5} \times \frac{1}{15} \times 15 \times \frac{14}{9} = \frac{2}{5}\frac{8}{5}, \text{ Ans.}$$

$$39. (\frac{9}{8} \div \frac{1}{12} - \frac{14}{9} \times \frac{1}{3}) \times 4 = (13\frac{1}{2} - 5\frac{5}{7}) \times 4 = 33\frac{7}{7}, \text{ Ans.}$$

$$40. (\frac{1}{3}^0 - \frac{9}{10}) \times (\frac{7}{2} + 5\frac{7}{8}) = \frac{7}{3}^0 \times \frac{7}{8}^5 = 22\frac{1}{16}, \text{ Ans.}$$

$$41. \frac{4}{5}^2 \div \frac{5}{3} \times 37\frac{1}{2} = \frac{4}{5}^2 \times \frac{3}{5} \times \frac{7}{2}^5 = 189, \text{ Ans.}$$

$$42. \frac{5}{16} \text{ of } \frac{14}{3}\frac{4}{1} \times \frac{3}{15}\frac{1}{3} = \frac{4}{3}\frac{5}{1} \times \frac{3}{15}\frac{1}{3} = \frac{1}{5}\frac{5}{3} \times \frac{4}{5}\frac{3}{1} = \frac{2}{9}\frac{1}{1}, \text{ Ans.}$$

$$43. (12\frac{1}{2} \div \frac{4}{7}) \div (\frac{1}{2} \div \frac{1}{2}) = \frac{2}{2}^5 \times \frac{7}{4} \div 1 = 21\frac{7}{8}, \text{ Ans.}$$

$$44. (\frac{4}{2}\frac{0}{1} \div \frac{1}{7}^2) \div (\frac{1}{9}^0 \div 9) = \frac{4}{2}\frac{0}{1} \times \frac{7}{1}\frac{2}{2} \times \frac{8}{1}\frac{1}{0} = 9, \text{ Ans.}$$

Art. 148.

- | | |
|------------------------------------|--|
| 1. \$615 = 61500 cts., Ans. | 7. 3467 cts. = \$34.67, Ans. |
| 2. \$24.06 = 2406 cts., Ans. | 8. 10408 cts. = \$104.08, Ans. |
| 3. \$9.206 = 9206 m., Ans. | 9. 46725 m. = \$46.725, Ans. |
| 4. 86 cts. = 860 m., Ans. | 10. 30200 cts. = \$302, Ans. |
| 5. \$.763 = 763 m., Ans. | 11. 762 m. = 76\frac{2}{10} cts., Ans. |
| 6. \$.47\frac{1}{2} = 475 m., Ans. | 12. 5607 m. = \$5.607, Ans. |

13. 3009 cts. = \$30.09, *Ans.* 32. $\$ \frac{875}{1000} = \$\frac{7}{8}$, *Ans.*
14. 850 m. = 85 cts., *Ans.* 33. $\frac{8}{10000} = \frac{1}{1250}$, *Ans.*
15. .23000 = .23, *Ans.* 34. $\frac{9375}{10000} = \frac{15}{16}$, *Ans.*
16. .10200 = .102, *Ans.* 35. 8.25 = $8\frac{1}{4}$, *Ans.*
17. .9000 = .9, *Ans.* 36. \$12.75 = $\$12\frac{3}{4}$, *Ans.*
18. .0700 = .07, *Ans.* 37. 25.005 = $25\frac{1}{200}$, *Ans.*
19. $\left. \begin{array}{l} .7 = .70000 ; \\ .05 = .05000 ; \\ .304 = .30400. \end{array} \right\} \text{Ans.}$ 38. \$36.125 = $\$36\frac{1}{8}$, *Ans.*
20. $\left. \begin{array}{l} 2.5 = 2.5000 ; \\ .107 = .1070 ; \\ .0008 = .0008. \end{array} \right\} \text{Ans.}$ 39. $\$ \frac{7000}{8} = \875 , *Ans.*
21. $\left. \begin{array}{l} 4 = 4.0000 ; \\ 2.17 = 2.1700 ; \\ .136 = .1360 ; \\ .0408 = .0408. \end{array} \right\} \text{Ans.}$ 40. $\$ \frac{400}{5} = \80 , *Ans.*
22. $\frac{16}{100} = \frac{4}{25}$, *Ans.* 41. $\$ \frac{500}{16} = \$31\frac{1}{4}$, *Ans.*
23. $\frac{125}{1000} = \frac{1}{8}$, *Ans.* 42. $\frac{1400}{5} = .56$, *Ans.*
24. $\frac{625}{1000} = \frac{5}{8}$, *Ans.* 43. $\frac{60000}{160} = .60625$, *Ans.*
25. $\$ \frac{75}{100} = \$\frac{3}{4}$, *Ans.* 44. $\frac{1000}{320} = .003\frac{1}{8}$, *Ans.*
26. $\$ \frac{375}{1000} = \$\frac{3}{8}$, *Ans.* 45. $\frac{4000}{125} = .392$, *Ans.*
27. $\$ \frac{655}{1000} = \$\frac{131}{200}$, *Ans.* 46. $\frac{7}{10} = .7$, *Ans.*
28. $\frac{24}{1000} = \frac{3}{125}$, *Ans.* 47. $\frac{400}{125} = .032$, *Ans.*
29. $\frac{5625}{10000} = \frac{9}{16}$, *Ans.* 48. $\frac{15000}{8} = 1.875$, *Ans.*
30. $\frac{3125}{10000} = \frac{5}{16}$, *Ans.* 49. $\frac{33}{500} = .066$, *Ans.*
31. 50. $\$5\frac{3}{5} = \5.60 , *Ans.*
32. 51. $\$12\frac{5}{8} = \12.625 , *Ans.*
33. 52. $\$42\frac{14}{10} = \42.20 , *Ans.*
34. 53. $\$36\frac{15}{16} = \36.9375 , *Ans.*

Art. 151.

(3.)	(7.)
16.5	\$1.375
.0348	.88
7.2	<u> </u>
.075	\$.495, <i>Ans.</i>
1.008	
.8	(8.)
<u> </u>	\$.875
25.6178, <i>Ans.</i>	.625
	<u> </u>
(4.)	\$.250, <i>Ans.</i>
\$.875	
5.75	(9.)
86.00	\$.75
.338	.6875
.875	<u> </u>
<u>102.95</u>	\$.0625, <i>Ans.</i>
\$196.788, <i>Ans.</i>	
	(10.)
(5.)	57.8
\$25.75	<u>7.36</u>
81.09	50.44, <i>Ans.</i>
16.125	
.875	(11.)
<u>150.875</u>	7.005
\$274.715, <i>Ans.</i>	.7005
	<u> </u>
	6.3045, <i>Ans.</i>
(6.)	
\$125.75	(12.)
<u>41.095</u>	4.0000000
\$84.655, <i>Ans.</i>	.0000024
	<u> </u>
	3.9999976, <i>Ans.</i>

(13.)

$$\begin{array}{r} 10.000 \\ .01 \\ \hline 9.99, \text{ Ans.} \end{array}$$

(14.)

$$\begin{array}{r} 1.875 \\ .001875 \\ \hline 1.873125, \text{ Ans.} \end{array}$$

(15.)

$$\begin{array}{r} \$600 \\ 6.00 \\ \hline \$594, \text{ Ans.} \end{array}$$

(16.)

$$\begin{array}{r} \$2560.50 \\ \left\{ \begin{array}{l} 1046 \\ 807.87 \end{array} \right. \\ \hline \$706.63, \text{ Ans.} \end{array}$$

(17.)

$$\begin{array}{r} \$10 \\ 7.18 \\ \hline \$2.82, \text{ Ans.} \end{array}$$

(18.)

$$\begin{array}{r} \$7.375 \\ 28.70 \\ 23.08 \\ 10.875 \\ \hline \$70.03, \text{ Ans.} \end{array}$$

(19.)

$$\begin{array}{r} \$70.00 \\ \left\{ \begin{array}{l} 36.75 \\ 18.666\frac{2}{3} \\ 8.125 \end{array} \right. \\ \hline \$6.458\frac{1}{3}, \text{ Ans.} \end{array}$$

(20.)

$$\begin{array}{r} 570.500 \\ \left\{ \begin{array}{l} 80.54 \\ 120.8 \\ 114.375 \end{array} \right. \\ \hline 254.785 \text{ tons, Ans.} \end{array}$$

(21.)

$$\begin{array}{r} \$2000 \\ \left\{ \begin{array}{l} 250.25 \\ 322.625 \end{array} \right. \\ \hline \$1427.125. \text{ Ans.} \end{array}$$

(22.)

$$\begin{array}{r} 56.25 \\ 24.625 \\ \hline 31.625 \text{ yd., Ans.} \end{array}$$

(23.)

$$\begin{array}{r} 45 \\ 2.5 \\ 3.60 \\ .075 \\ .0052 \\ .000406 \\ \hline 51.180606, \text{ Ans.} \end{array}$$

$$\begin{array}{r}
 (24.) \\
 7346.00 \\
 \left\{ \begin{array}{l} 364.05 \\ 1235.125 \\ 2700.875 \\ 850.65 \end{array} \right. \\
 \hline
 2194.85 \text{ acres, } Ans.
 \end{array}$$

$$\begin{array}{r}
 (25.) \\
 2.5 \\
 5.75 \\
 3.625 \\
 3.0642 \\
 8.925 \\
 \hline
 23.8642 \text{ bbl., } Ans.
 \end{array}$$

$$\begin{array}{r}
 (26.) \\
 \$14725 \\
 \left\{ \begin{array}{l} 3560 \\ 7015.875 \end{array} \right. \\
 \hline
 \$4149.125, \text{ } Ans.
 \end{array}$$

$$\begin{array}{r}
 (27.) \\
 \$75.875 \\
 \left\{ \begin{array}{l} 6.08 \\ 26.625 \\ 16.00 \\ 7.40 \end{array} \right. \\
 \hline
 \$19.77, \text{ } Ans.
 \end{array}$$

$$\begin{array}{r}
 (28.) \\
 \$6736.75 \\
 325.40 \\
 \hline
 \$7062.15, \text{ } Ans.
 \end{array}$$

$$\begin{array}{r}
 (29.) \\
 34.72 \\
 48.44 \\
 152.17 \\
 95.375 \\
 56.625 \\
 \hline
 387.33 \text{ rods, } Ans.
 \end{array}$$

30. $\$15.25 - \$5.85 = \$9.40, \text{ } Ans.$

31. $154.686 + 135.1052 = 289.7892, \text{ } Ans.$

32. $\$70 - \$15.275 + \$7.60 = \$62.325, \text{ } Ans.$

33. $4.1375 - 1.3125 = 4.1375, \text{ } Ans.$

34. $\$350 - \$155.95 + \$95 = \$95, \text{ } Ans.$

35. $\$49.12 - \$2.05 = \$47.07, \text{ } Ans.$

Art. 153.

2. $4.64 \times 3.35 = 15.544$, *Ans.*
3. $53.062 \times 4.43 = 235.06466$, *Ans.*
4. $.1346 \times .203 = .0273238$, *Ans.*
5. $675.1 \times .008 = 5.4008$, *Ans.*
6. $\$2.45 \times 6 = \14.70 , *Ans.*
7. $.326 \times 9 = 2.934$, *Ans.*
8. $4.007 \times 26 = 104.182$, *Ans.*
9. $.0038 \times 15 = .0570$, *Ans.*
10. $\$6.25 \times .5 = \3.125 , *Ans.*
11. $3.84 \times .22 = .8448$, *Ans.*
12. $\$12.031 \times .07 = \$.84217$, *Ans.*
13. $.506 \times .042 = .021252$, *Ans.*
14. $\$3.6 \times .045 = \$.162$, *Ans.*
15. $.723 \times 6.04 = 4.36692$, *Ans.*
16. $28.7 \times .029 = .8323$, *Ans.*
17. $\$4.02 \times .186 = .74772$, *Ans.*
18. $\$324.5 \times .324 = \105.138 , *Ans.*
19. $\$175.64 \times .205 = \36.0062 , *Ans.*
20. $5.728 \times 100 = 572.8$, *Ans.*
21. $.6207 \times 1000 = 620.7$, *Ans.*
22. $.055 \times 25 = 1.375$, *Ans.*
23. $26000 \times .026 = 676$, *Ans.*
24. $8.4 \times 2.44 = 20.496$, *Ans.*

25. $.7625 \times .0625 = .04765625$, *Ans.*
 26. $28 \times .25 \times 6 = 42$, *Ans.*
 27. $.014 \times 6.2 \times .007 = .0006076$, *Ans.*
 28. $\$37.5 \times .08 \times .5 = \1.50 , *Ans.*
 29. $\$200 \times 3.4 \times .006 = \4.08 , *Ans.*
 30. $.304 \times 100 \times 10.25 = 311.6$, *Ans.*
 31. $\$59.36 \times 2.5 \times .9 = \133.56 , *Ans.*
 32. $\$75.375 \times 46 = \3467.25 , *Ans.*
 33. $\$9.625 \times 100 = \962.50 , *Ans.*
 34. $\$4.50 \times 14.125 = \63.5625 , *Ans.*
 35. $\$.625 \times 125 = \78.125 , *Ans.*
 36. $\$3.25 \times 25.75 = \83.6875 , *Ans.*
 37. $\$.375 \times 3000 = \1125 , *Ans.*
 38. $\$2.625 \times 170 = \446.25 , *Ans.*
 39. $\$4.38 \times 100 = \438 , *Ans.*
 40. $\$72.75 \times 204.7 = \14891.925 , *Ans.*
 41. $\$.375 \times 125 = \46.875 ; $\$.09 \times 75 = \6.75 ;
 $\$.60 \times 12 = \7.20 ;
 $\$46.875 - (\$6.75 + \$7.20 = \32.925 , *Ans.*

Art. 155.

2. $81.6 \div 3.6 = 22.66\frac{2}{3}$, *Ans.*
 3. $675 \div .15 = 4500$, *Ans.*
 4. $.952 \div 4.76 = .2$, *Ans.*
 5. $\$41.25 \div 33 = \1.25 , *Ans.*
 6. $\$518.70 \div \$14.25 = 36.4$, *Ans.*

7. $345.15 \div .075 = 4602$, *Ans.*
8. $75 \div .75 = 100$. *Ans.*
9. $.75 \div 75 = .01$, *Ans.*
10. $7.5 \div .75 = .1$, *Ans.*
11. $645.5 \div 1000 = .6455$, *Ans.*
12. $\$56 \div .007 = \8000 , *Ans.*
13. $.56 \div 1.12 = .5$, *Ans.*
14. $17.6 \div 10 = 1.76$, *Ans.*
15. $.0992 \div .32 = .31$, *Ans.*
16. $3 \div 18.75 = .16$, *Ans.*
17. $17.5 \div 1000 = .0175$, *Ans.*
18. $.084 \div 8 = .0105$, *Ans.*
19. $\$68 \div 32 = \2.125 , *Ans.*
20. $44 \div .4 = 110$, *Ans.*
21. $\$27 \div 37.5 = \$.72$, *Ans.*
22. $100 \div .001 = 100000$, *Ans.*
23. $\$62.50 \div 125 = \$.50$, *Ans.*
24. $\$2.80 \div 35 = \$.08$, *Ans.*
25. $\$168.48 \div 144 = \1.17 , *Ans.*
26. $\$3156.50 \div 100 = \31.565 , *Ans.*
27. $\$7.875 \div 9 = \$.875$, *Ans.*
28. $\$44.748 \div 396 = \$.113$, *Ans.*
29. $\$625 \div 2500 = \$.25$, *Ans.*
30. $\$153.125 \div 2450 = \$.0625$, *Ans.*
31. $\$80.46 \div 894 = \$.09$, *Ans.*

32. $32.4 \div 2.7 = 12$ coats, *Ans.*
33. $\$82.50 \div 1.25 \times 2.5 = \1.65 ;
 $\$224.40 \div \$1.65 = 136$ bbl., *Ans.*
34. $(\$4.125 \times 26) - (\$3.90 \times 26) = \$5.85$, *Ans.*
35. $\$9 \div \$.3125 = 28.8$ bu., *Ans.*
36. $\$27.36 \div 18.24 \times 7.25 = \10.875 ;
 $\$1.50 \times 9.75 = \14.625 ;
 $\$1.50 \times 15.375 = \23.0625 . } *Ans.*
37. $\$32.3 \div 4.75 \times 9.6 = \65.28 , *Ans.*
38. $\$1.12 \times 5 \div 14 = .4$, *Ans.*
39. $\$15.5 \div 8 \times 100 = \193.75 , *Ans.*
40. $7.1 \times 8.2 - (34.75 \div 2.5) = 44.32$, *Ans.*
41. $25 \times .5 \times 12 + 20 \div 100 = 1.7$, *Ans.*
42. $(\$560 - \$106.75) \div 14 = \$32.375$, *Ans.*
43. $\$3.20 \times 4 + \$.08 \times 37 = \$15.76$;
 $(\$15.76 - \$6.80) \div .16 = 56$ lb., *Ans.*
44. $\$.75 \times 40 + \$.625 \times 50 + \$15.75 \times 5 = \140.25 ;
 $(\$140.25 - \$102.75) \div 5 = \$7.45$, *Ans.*
45. $324 + .324 + 7.75 + 5.5 = 337.574$;
 $324 - .324 = 323.676$;
 $324 \times .324 = 104.976$;
 $324 \div .324 = 1000$. } *Ans.*
46. $.23 + .009 + 75.64 + .225 = 76.104$;
 $.23 - .009 = .221$;
 $.23 \times .009 = .00207$;
 $.23 \div .009 = 25.55\frac{5}{9}$. } *Ans.*

$$\begin{array}{rcl}
 47. & 952 + 4.76 + 723 + .0156 = 1679.7756; & \\
 & 952 - 4.76 & = 947.24; \\
 & 952 \times 4.76 & = 4531.52; \\
 & 952 \div 4.76 & = 200. \quad \left. \vphantom{\begin{array}{l} 952 + 4.76 + 723 + .0156 \\ 952 - 4.76 \\ 952 \times 4.76 \\ 952 \div 4.76 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 48. & .003 + .0026 + 87.5 + .088 = 87.5936; & \\
 & .003 - .0026 & = .0004; \\
 & .003 \times .0026 & = .0000078; \\
 & .003 \div .0026 & = 1.15\frac{5}{13}. \quad \left. \vphantom{\begin{array}{l} .003 + .0026 + 87.5 + .088 \\ .003 - .0026 \\ .003 \times .0026 \\ .003 \div .0026 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 49. & 1.245 + .27 + 242.5 + .75 = 244.765; & \\
 & 1.245 - .27 & = .975; \\
 & 1.245 \times .27 & = .33615; \\
 & 1.245 \div .27 & = 4.61\frac{1}{3}. \quad \left. \vphantom{\begin{array}{l} 1.245 + .27 + 242.5 + .75 \\ 1.245 - .27 \\ 1.245 \times .27 \\ 1.245 \div .27 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 50. & 506.125 + .0485 + 41.625 + 18.375 = 566.1735; & \\
 & 506.125 - .0485 & = 506.0765; \\
 & 506.125 \times .0485 & = 24.5470625; \\
 & 506.125 \div .0485 & = 10435.5\frac{5}{7}. \quad \left. \vphantom{\begin{array}{l} 506.125 + .0485 + 41.625 + 18.375 \\ 506.125 - .0485 \\ 506.125 \times .0485 \\ 506.125 \div .0485 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 51. & 9.6188 + 3.46 + 218.4375 + 21.9 = 253.4163; & \\
 & 9.6188 - 3.46 & = 6.1588; \\
 & 9.6188 \times 3.46 & = 33.281048; \\
 & 9.6188 \div 3.46 & = 2.78. \quad \left. \vphantom{\begin{array}{l} 9.6188 + 3.46 + 218.4375 + 21.9 \\ 9.6188 - 3.46 \\ 9.6188 \times 3.46 \\ 9.6188 \div 3.46 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 52. & 3.6 + .00006 + 2.39015 + .007 = 5.99721; & \\
 & 3.6 - .00006 & = 3.59994; \\
 & 3.6 \times .00006 & = .000216; \\
 & 3.6 \div .00006 & = 60000. \quad \left. \vphantom{\begin{array}{l} 3.6 + .00006 + 2.39015 + .007 \\ 3.6 - .00006 \\ 3.6 \times .00006 \\ 3.6 \div .00006 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 53. & 7.75 - 5.5 = 2.25; & \\
 & 7.75 \times 5.5 = 42.625; & \\
 & 7.75 \div 5.5 = 1.4\frac{1}{11}. & \left. \vphantom{\begin{array}{l} 7.75 - 5.5 \\ 7.75 \times 5.5 \\ 7.75 \div 5.5 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$\begin{array}{rcl}
 54. & 75.64 - .225 = 75.415; & \\
 & 75.64 \times .225 = 17.019; & \\
 & 75.64 \div .225 = 336.17\frac{1}{3}. & \left. \vphantom{\begin{array}{l} 75.64 - .225 \\ 75.64 \times .225 \\ 75.64 \div .225 \end{array}} \right\} \text{Ans.}
 \end{array}$$

$$55. \begin{cases} 723 - .0156 = 722.9844; \\ 723 \times .0156 = 11.2788; \\ 723 \div .0156 = 46346.15\frac{5}{18}. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 723 \\ 723 \\ 723 \end{matrix}} \right\} \text{Ans.}$$

$$56. \begin{cases} 87.5 - .088 = 87.412; \\ 87.5 \times .088 = 7.7; \\ 87.5 \div .088 = 994.3\frac{2}{11}. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 87.5 \\ 87.5 \\ 87.5 \end{matrix}} \right\} \text{Ans.}$$

$$57. \begin{cases} 242.5 - .75 = 241.75; \\ 242.5 \times .75 = 181.875; \\ 242.5 \div .75 = 323.3\frac{1}{3}. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 242.5 \\ 242.5 \\ 242.5 \end{matrix}} \right\} \text{Ans}$$

$$58. \begin{cases} 41.625 - 18.375 = 23.25; \\ 41.625 \times 18.375 = 764.859375; \\ 41.625 \div 18.375 = 2.2653\frac{3}{4}. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 41.625 \\ 41.625 \\ 41.625 \end{matrix}} \right\} \text{Ans.}$$

$$59. \begin{cases} 218.4375 - 21.9 = 196.5375; \\ 218.4375 \times 21.9 = 4783.78125; \\ 218.4375 \div 21.9 = 9.9743\frac{1}{4}. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 218.4375 \\ 218.4375 \\ 218.4375 \end{matrix}} \right\} \text{Ans.}$$

$$60. \begin{cases} 2.39015 - .007 = 2.38315; \\ 2.39015 \times .007 = .01673105; \\ 2.39015 \div .007 = 341.45. \end{cases} \text{ } \left. \vphantom{\begin{matrix} 2.39015 \\ 2.39015 \\ 2.39015 \end{matrix}} \right\} \text{Ans.}$$

$$61. (.056 + .01575 \times 100) - .8 = .831, \text{ Ans.}$$

$$62. 713.286 \div (.306 \times 1.5) = 1554, \text{ Ans.}$$

$$63. (.0006 \times 10000 + 80) \div .125 = 688, \text{ Ans.}$$

$$64. 469 \times .0309 \times 100 = 1449.21, \text{ Ans.}$$

$$65. \$4397.40 \div \$10.47 - \$125 = 295, \text{ Ans.}$$

Art. 162.

$$2. \$\frac{1}{6} \times 1935 = \$\frac{1935}{6} = \$322.50, \text{ Ans.}$$

$$3. \$\frac{1}{8} \times 56480 = \$\frac{56480}{8} = \$7060, \text{ Ans.}$$

$$4. \$\frac{1}{5} \times 1275 = \$\frac{1275}{5} = \$255, \text{ Ans.}$$

$$5. 750 \div 3 = \$250, \text{ Ans.}; 750 \div 4 = \$187.50, \text{ Ans.}$$

$$6. 631 \div 2 = \$315.50, \text{ Ans.}; 1250 \div 2 = \$625, \text{ Ans.}; \\ 1605 \div 2 = \$802.50, \text{ Ans.}$$

$$7. 43 \times 12 \div 3 = \$172, \text{ Ans.}$$

$$8. \quad \begin{array}{r} 5 \times 28 \div 6 = \$23.33\frac{1}{3} \\ 6 \times 34 \div 12 = \$17 \\ \hline \$40.33\frac{1}{3} \end{array}$$

$$\$40.33\frac{1}{3} - 41 \div 2 = \$19.83\frac{1}{3}, \text{ Ans.}$$

$$10. \$1\frac{1}{3} \times 642 = \$856, \text{ Ans.}$$

$$11. \left. \begin{array}{l} \$1\frac{1}{3} \times 288 = \$384; \\ \$1\frac{1}{4} \times 288 = \$360; \\ \$1\frac{1}{2} \times 288 = \$432. \end{array} \right\} \text{ Ans.}$$

$$12. \left. \begin{array}{l} \$1\frac{1}{8} \times 720 = \$810; \\ \$1\frac{1}{6} \times 720 = \$840; \\ \$1\frac{1}{5} \times 720 = \$864; \\ \$1\frac{1}{3} \times 720 = \$960. \end{array} \right\} \text{ Ans.}$$

Art. 163.

$$2. 318 \times 3 = 954; 318 \times 2 = 636, \text{ Ans.}$$

$$3. 240 \times 6 = 1440; 240 \times 5 = 1200; 240 \times 4 = 960, \text{ Ans.}$$

$$4. 350 \times 16 = 5600; 350 \times 12 = 4200; 350 \times 10 = 3500; \\ 350 \times 8 = 2800, \text{ Ans.}$$

$$5. 150.75 \times 4 = 603, \text{ Ans.}$$

$$6. 450 \times 2 = 900; 450 \times 3 = 1350; 450 \times 4 = 1800, \text{ Ans.}$$

Art. 164.

2. $\$6.20 \times \overline{3240 \div 100} = \$200.88, \text{ Ans.}$
3. $\$8.50 \times \overline{12345 \div 1000} = \$104.93, \text{ Ans.}$
4. $\$.75 \times \overline{2465 \div 100} = \$18.487, \text{ Ans.}$
5. $\$3.75 \times \overline{9320 \div 1000} = \$34.95, \text{ Ans.}$
6. $\$5.12 \times \overline{5800 \div 1000} = \$29.696, \text{ Ans.}$
7. $\$.84 \times \overline{6700 \div 100} = \$56.28, \text{ Ans.}$
8. $\$1.12 \times \overline{784 \div 100} = \$8.78, \text{ Ans.}$
9. $\$90 \times \overline{3200 \div 1000} + \$11.50 \times \overline{952 \div 1000}$
 $+ \$1.85 \times \overline{1624 \div 100} = \$328.992, \text{ Ans.}$
10. $\$4.375 \times \overline{1476 \div 100} = \$64.575, \text{ Ans.}$
11. $\$14.375 \times \overline{212500 \div 1000} = \$3054.6875 ;$
 $\$1.75 \times \overline{212500 \div 100} = \$3718.75 ;$
 $\$3718.75 - \$3054.6875 = \$664.06\frac{1}{4}, \text{ Ans.}$

Art. 165.

2. $\$12.75 \times (450 \div 1000 \div 2) = \$2.868, \text{ Ans.}$
3. $\$6.80 \times (1400 \div 1000 \div 2) = \$4.76, \text{ Ans.}$
4. $\$1.80 \times (3244 \div 1000 \div 2) = \$2.919, \text{ Ans.}$
5. $\$18.50 \times (1580 \div 1000 \div 2) = \$14.615, \text{ Ans.}$
6. $\$6.84 \times (3142 \div 1000 \div 2) = \$10.7456, \text{ Ans.}$
7. $\$20.25 \times (7488 \div 1000 \div 2) = \$75.816, \text{ Ans.}$

$$8. \begin{aligned} \$7.50 \times (6340 \div 1000 \div 2) &= \$23.775; \\ \$6.25 \times (5080 \div 1000 \div 2) &= \$15.875; \\ &\underline{\$39.650}, \text{ Ans.} \end{aligned}$$

$$9. \$26.44 \times (1526 \div 1000 \div 2) = \$20.17, \text{ Ans.}$$

Art. 166.

$$1. .16, .625, .5625, .0008 = \frac{16}{100}, \frac{625}{1000}, \frac{5625}{10000}, \frac{8}{10000}, \text{ Ans.}$$

$$2. \frac{3}{32} + .62\frac{1}{2} + .37\frac{1}{16} + \frac{3}{8} = .09375 + .625 + .370625 + .375 \\ = 1.464375, \text{ Ans.}$$

$$.41\frac{3}{16} + 1.00\frac{4}{5} + .15\frac{1}{4} + \frac{1}{2}\frac{9}{10} = .411875 + 1.008 + .1525 + .95 \\ = 2.522375, \text{ Ans.}$$

$$3. (\$4.625 \times 27.5 + \$453.75) \div 27.5 = \$21.125, \text{ Ans.}$$

$$4. \$2 \div \$2.50 = .8 \text{ yd.}, \text{ Ans.}$$

$$5. \$70.15 \div (\$1.37 + \$.95 + \$.73) = 23, \text{ or } 23 \text{ bu.}, \text{ Ans.}$$

$$6. \$54.72 \div 36.48 \times 14.25 = \$21.375, \text{ Ans.}$$

$$7. \$3461.50 \div 46 \times 5 = \$376.25, \text{ Ans.}$$

$$8. \$38 \div 4.75 \times 7.5 = \$60, \text{ Ans.}$$

$$9. \$15.875 \div .125 \times 25.42 = \$3228.34, \text{ Ans.}$$

$$10. \$11.375 \div 3.5 \times 20.125 = 65.41, \text{ Ans.}$$

$$11. \$5.635 \times .875 \times 9.25 = \$59.57, \text{ Ans.}$$

$$12. \$.625 \times .8 = \$.50, \text{ Ans.}$$

$$13. \$101.5 \div 29 \times 35 = \$122.50, \text{ Ans.}$$

$$14. \$16.50 \times \overline{3240 \div 100} = \$534.60, \text{ Ans.}$$

$$15. \$66.44 \times 842.75 = \$55992.31, \text{ Ans.}$$

16. $\$1.94 \times \overline{840 \div 100} = \16.296
 $\$12.50 \times \overline{1262 \div 1000} = \15.775
 $\$32.071, \text{ Ans.}$
17. $162.5 \text{ lb.} \times 140 = 22750 \text{ lb.};$
 $\$17.75 \times (22750 \div 1000 \div 2) = \$201.906, \text{ Ans.}$
18. $\$10 \times (18962 \div 1000 \div 2) = \$94.81, \text{ Ans.}$
19. $\$5.75 \times \overline{3700 \div 100} = \$212.75, \text{ Ans.}$
20. $\$.96 \times \overline{3840 \div 100} = \$36.864, \text{ Ans.}$
21. $\$150 \div \$22.50 = 6\frac{2}{3} \text{ M., Ans.}$
22. $\$15.75 \div \$.875 = 18; 18 \text{ yd., Ans.}$
23. $\$4234\frac{1}{2} \div \$22\frac{1}{2} = 188.2; 188.2 \text{ acres, Ans.}$
24. $\$80.745 \div \$.42 = 192.25 \text{ lb., Ans.}$
25. $\$.56\frac{1}{4} \times 1200 = \$675; \$675 + \$168.675 = \$843.675;$
 $\$843.675 - \$.60 \times 375.5 = \$618.375;$
 $1200 \text{ bu.} - 375\frac{1}{2} \text{ bu.} = 824.5 \text{ bu.};$
 $\$618.75 \div 824.5 = \$.75, \text{ Ans.}$

Art. 172.

(1.)	(2.)
$\$60$	$\$2.25 \times 216 = \486
$\$4.50 \times 600 = 27$	$1.12\frac{1}{2} \times 160 = 180$
$3.25 \times 6 = 19.50$	$1.25 \times 75 = 93.75$
$1.75 \times 4 = 7.00$	$1.37\frac{1}{2} \times 110 = 151.25$
3.75	$75.50 \times 6 = 453.00$
$\$117.25, \text{ Ans.}$	$.145 \times 648 = 93.96$
	$.875 \times 36 = 31.50$
	$\$1489.46, \text{ Ans.}$

(3.)

$$\begin{array}{rcl}
 \$.18\frac{1}{4} \times 485 \times 8 & = & \$708.10 \\
 .21\frac{1}{2} \times 506 \times 6 & = & 652.74 \\
 .60 \times 215 & = & 129.00 \\
 \hline
 & & \$1489.84, \text{ Ans.}
 \end{array}$$

(4.)

$$\begin{array}{rcl}
 \$2.30 \times 5 & = & \$11.50 \\
 1.12\frac{1}{2} \times 7 & = & 7.875 \\
 1.75 \times 15 & = & 26.25 \\
 3.40 \times 4 & = & 13.60 \\
 2.87\frac{1}{2} \times 20 & = & 57.50 \\
 .37\frac{1}{2} \times 12 & = & 4.50 \\
 & & 2.78 \\
 \hline
 & & \$124.005, \text{ Ans.}
 \end{array}$$

(5.)

$$\begin{array}{rcl}
 \text{Dr.} & & \\
 \$9 \times 5 & = & \$45.00 \\
 10.37\frac{1}{2} \times 16 & = & 166.00 \\
 5.48 \times 4\frac{1}{2} & = & 24.66 \\
 .16\frac{2}{3} \times 564 & = & 94 \\
 11.72 \times 6\frac{1}{4} & = & 73.25 \\
 .33\frac{1}{3} \times 120 & = & 40 \\
 1.62\frac{1}{2} \times 14 & = & 22.75 \\
 \hline
 & & \$465.66
 \end{array}$$

$$\begin{array}{rcl}
 \text{Cr.} & & \\
 \$7.50 \times 10 & = & \$75.00 \\
 2 \times 14.70 & = & 29.40 \\
 \text{Draft,} & = & 200 \\
 $.40 \times 146 & = & 58.40 \\
 & & \hline
 & & \$362.80 \\
 \text{Bal. due,} & & 102.86, \text{ Ans.} \\
 & & \hline
 & & \$465.66
 \end{array}$$

(6.)

$$\begin{array}{rcl}
 \$.12 \times 25 & = & \$3.00 \\
 .62\frac{1}{2} \times 5 & = & 3.125 \\
 .42 \times 4 & = & 1.68 \\
 .09 \times 46 & = & 4.14 \\
 .14 \times 30 & = & 4.20 \\
 .12 \times 4 & = & .48 \\
 \hline
 & & \$16.625, \text{ Ans.}
 \end{array}$$

(7.)

$$\begin{array}{rcl}
 \$3.60 \times 7 & = & \$25.20 \\
 1.12\frac{1}{2} \times 9 & = & 10.125 \\
 .90 \times 12 & = & 10.80 \\
 1.37\frac{1}{2} \times 24 & = & 33.00 \\
 .65 \times 32 & = & 20.80 \\
 \hline
 & & \$99.925, \\
 & & \text{Ans.}
 \end{array}$$

$$\begin{array}{r}
 (8.) \\
 \$3.75 \times 67 = \$251.25 \\
 2.62 \times 108 = 282.96 \\
 1.12 \times 75 = 84.00 \\
 .86 \times 27 = 23.22 \\
 .70 \times 35 = 24.50 \\
 1.04 \times 50 = 52.00 \\
 \hline
 \$717.93,
 \end{array}$$

Ans.

$$\begin{array}{r}
 (9.) \\
 $.28 \times 726 = \$203.28 \\
 .09 \times 972 = 87.48 \\
 .12 \times 481\frac{1}{2} = 57.78 \\
 .16 \times 509\frac{3}{4} = 81.56 \\
 .26 \times 81 = 21.06 \\
 2.40 \times 15 = 36.00 \\
 .14 \times 963 = 134.82 \\
 \hline
 \$621.98,
 \end{array}$$

Ans.

$$\begin{array}{r}
 (10.) \\
 \$5.50 \times 12 = \$66.00 \\
 5.75 \times 7 = 40.25 \\
 4.25 \times 2 = 8.50 \\
 \hline
 \$114.75, \text{ } Ans.
 \end{array}$$

$$\begin{array}{r}
 (11.) \\
 \$16 \times \overline{21000 \div 1000}, \text{ or } 21 = \$336.00 \\
 12.50 \times \overline{9420 \div 1000}, \text{ or } 9.42 = 117.75 \\
 1.70 \times \overline{7075 \div 100}, \text{ or } 70.75 = 120.275 \\
 2.62\frac{1}{2} \times \overline{762 \div 100}, \text{ or } 7.62 = 20.002 \\
 .87\frac{1}{2} \times \overline{6840 \div 100}, \text{ or } 68.4 = 59.85 \\
 15.60 \times \overline{4790 \div 1000}, \text{ or } 4.79 = 74.724 \\
 \hline
 \$728.601, \text{ } Ans.
 \end{array}$$

$$\begin{array}{r}
 (12.) \\
 \$4.20 \times 15 = \$63.00 \\
 1.37\frac{1}{2} \times 24 = 33.00 \\
 .90 \times 10 = 9.00 \\
 .75 \times 42 = 31.50 \\
 .16 \times 60 = 9.60 \\
 2.62\frac{1}{2} \times 12 = 31.50 \\
 .37\frac{1}{2} \times 38 = 14.25 \\
 \hline
 \$191.85, \text{ } Ans.
 \end{array}$$

Art. 197.

(2.)

$$\begin{array}{r}
 7 \text{ lb. } 10 \text{ oz. } 16 \text{ pwt. } 11 \text{ gr.} \\
 \underline{12} \\
 94 \text{ oz.} \\
 \underline{20} \\
 1896 \text{ pwt.} \\
 \underline{24} \\
 45515 \text{ gr., } \textit{Ans.}
 \end{array}$$

(3.)

$$\begin{array}{r}
 3 \text{ T. } 6 \text{ cwt. } 21 \text{ lb. } 12 \text{ oz.} \\
 \underline{20} \\
 66 \text{ cwt.} \\
 \underline{100} \\
 6621 \text{ lb.} \\
 \underline{16} \\
 105948 \text{ oz., } \textit{Ans.}
 \end{array}$$

(4.)

$$\begin{array}{r}
 6 \text{ wk. } 5 \text{ da. } 9 \text{ hr. } 25 \text{ min.} \\
 \underline{7} \\
 47 \text{ da.} \\
 \underline{24} \\
 1137 \text{ hr.} \\
 \underline{60} \\
 68245 \text{ min., } \textit{Ans.}
 \end{array}$$

(5.)

$$\begin{array}{r}
 12 \text{ mi. } 36 \text{ rd. } 10 \text{ ft.} \\
 \underline{320} \\
 3876 \text{ rd.} \\
 \underline{16\frac{1}{2}} \\
 63964 \text{ ft., } \textit{Ans.}
 \end{array}$$

(6.)

$$\begin{array}{r}
 10 \text{ rd. } 5 \text{ ft. } 6 \text{ in.} \\
 \underline{16\frac{1}{2}} \\
 170 \text{ ft.} \\
 \underline{12} \\
 2046 \text{ in., } \textit{Ans.}
 \end{array}$$

(7.)

$$\begin{array}{r}
 1 \text{ A. } 15 \text{ sq. rd.} \\
 \underline{160} \\
 160 \text{ sq. rd.} \\
 \underline{30\frac{1}{4}} \\
 4855 \text{ sq. yd.} \\
 \underline{9} \\
 43695 \text{ sq. ft., } \textit{Ans}
 \end{array}$$

(8.)

$$\begin{array}{r}
 7 \text{ T. } 9 \text{ cwt. } 18 \text{ lb.} \\
 \underline{20} \\
 149 \text{ cwt.} \\
 \underline{100} \\
 14918 \text{ lb., } \textit{Ans.}
 \end{array}$$

(9.)

22 lb. 10 oz.

12

274 oz.

205480 pwt., *Ans.*

(10.)

365 da.

24

8760 hr.

60525600 min., *Ans.*

(11.)

75 Cd. 6 cd. ft.

8

606 cd. ft.

169696 cu. ft., *Ans.*

(12.)

12 hhd. 21 gal.

63

777 gal.

4

3108 qt.

26216 pt., *Ans.*

(13.)

24 bu. 3 pk.

4

99 pk.

8792 qt., *Ans.*

(14.)

5 bundles.

2

10 reams.

20200 quires, *Ans.*

(15.)

6 G. gross.

12

72 gross.

12864 doz., *Ans.*

(16.)

31 gal. 2 qt.

4

126 qt.

2

252 pt.

41008 gi., *Ans.*

$$17. \quad 5 \text{ lb. } 9 \text{ oz. } 14 \text{ pwt.} = 1394 \text{ pwt.};$$

$$\$.75 \times 1394 = \$1045.50, \text{ Ans.}$$

$$18. \quad \frac{3}{4} \text{ mi.} = \frac{3}{4} \text{ of } 320 \text{ rd.} = 240 \text{ rd.};$$

$$240 \text{ rd.} \times 4 = 960 \text{ rd., Ans.}$$

$$19. \quad 2 \text{ bu. } 3 \text{ pk.} = 11 \text{ pk.}; 1548 \text{ bu. } 1 \text{ pk.} = 6193 \text{ pk.};$$

$$6193 \text{ pk.} \div 11 \text{ pk.} = 563 \text{ bbl., Ans.}$$

$$20. \quad 960 \text{ lb.} \div 12 \text{ lb.} = 80 \text{ boxes, Ans.}$$

$$21. \quad 1 \text{ bu.} = 64 \text{ qt.}; \$.125 \times 64 = \$8;$$

$$\$8 - \$4.75 = \$3.25;$$

$$\$3.25 \times 9 = \$29.25, \text{ Ans.}$$

(22.)

4 reams 10 quires.

20

90 quires.

24

2160 sheets, Ans.

$$23. \quad 2 \text{ G. gross} = 3456; \$.125 \times 3456 = \$432, \text{ Ans.}$$

$$24. \quad 28 \text{ da.} = 2419200 \text{ sec., Ans.}$$

$$25. \quad 1 \text{ pt.} + 2 \text{ pt.} + 4 \text{ pt.} = 7 \text{ pt.};$$

$$31\frac{1}{2} = 252 \text{ pt.}; 252 \text{ pt.} \div 7 = 36 \text{ bottles, Ans.}$$

$$26. \quad \$.28 \times 63 = \$17.64, \text{ Ans.}$$

$$27. \quad 1\frac{1}{2} \text{ mi.} = 480 \text{ rd.}; 480 \text{ rd.} \times 4 = 1920 \text{ rd., Ans.}$$

$$28. \quad (50 \text{ A.} - 14 \text{ A.}) \times 160 = 5760 \text{ sq. rd., Ans.}$$

$$29. \quad 36 \text{ lb. } 8 \text{ oz.} = 8800 \text{ pwt.}; \$1.04 \times 8800 = \$9152, \text{ Ans.}$$

30. $365 \text{ da.} \times 100 + 24 \text{ da.} = 36524 \text{ da.};$
 $36524 \text{ da.} \times 24 = 876576 \text{ hr., Ans.}$
31. 2 bales 2 bun. 15 quires = 11880 sheets;
 $11880 \text{ sheets} \div 8 = 1485 \text{ vols., Ans.}$
32. $16 \text{ pp.} \times 16 = 256 \text{ pp., Ans}$
33. $100 \text{ lb.} \times 36.25 = 3625 \text{ lb., Ans.}$
34. $196 \text{ lb.} \times 42\frac{3}{4} = 8344 \text{ lb., Ans.}$
35. $100 \text{ lb.} \times 29.5 = 2950 \text{ lb., Ans.}$
36. $280 \text{ lb.} \times 116\frac{1}{2} = 32620 \text{ lb., Ans.}$
37. $100 \text{ lb.} \times 63.25 = 6325 \text{ lb., Ans.}$
38. $56 \text{ lb.} \times .75 \text{ of } 75 = 3150 \text{ lb., N. Y., Ans.}$
39. $60 \text{ lb.} \times 125\frac{3}{4} = 7545 \text{ lb., Ans.}$
40. $32 \text{ lb.} \times \frac{2}{3} \text{ of } 21648 = 461824 \text{ lb., Ans.}$
41. $56 \text{ lb.} \times .7 \text{ of } 40 = 1568 \text{ lb., Ans.}$
42. $240 \text{ lb.} \times 7.5 = 1800 \text{ lb., Ans.}$

Art. 198.

$$\begin{array}{r}
 \text{(2.)} \\
 3 \\
 \underline{24} \\
 5) 72 \text{ (14 hr. 24 min.,} \\
 \underline{70} \qquad \text{Ans.} \\
 2 \\
 \underline{60} \\
 120 \\
 \underline{120}
 \end{array}$$

$$\begin{array}{r}
 \text{(3.)} \\
 3 \\
 \underline{12} \\
 5) 36 \text{ (7 oz. 4 pwt.,} \\
 \underline{35} \qquad \text{Ans.} \\
 1 \\
 \underline{20} \\
 20 \\
 \underline{20}
 \end{array}$$

(4.)

$$\begin{array}{r}
 9 \\
 4 \\
 \hline
 10 \) \ 36 \ (\ 3\frac{3}{5} \text{ qr. yd., } Ans. \\
 30 \\
 \hline
 6
 \end{array}$$

(5.)

$$\begin{array}{r}
 4 \\
 4 \\
 \hline
 5 \) \ 16 \ (\ 3 \text{ wk. } 1 \text{ da. } 9 \text{ hr.} \\
 15 \quad 36 \text{ min., } Ans. \\
 \hline
 1 \\
 7 \\
 \hline
 7 \\
 5 \\
 \hline
 2 \\
 24 \\
 \hline
 48 \\
 45 \\
 \hline
 3 \\
 60 \\
 \hline
 180 \\
 180 \\
 \hline
 \end{array}$$

(6.)

$$\begin{array}{r}
 5 \\
 160 \\
 \hline
 6 \) \ 800 \ (\ 133 \text{ sq. rd. } 10 \text{ sq.} \\
 798 \quad \text{yd. } 0 \text{ sq. ft.} \\
 \hline
 2 \quad 108 \text{ sq. in.,} \\
 304 \quad Ans. \\
 \hline
 60.5 \\
 60 \\
 \hline
 .5 \\
 9 \\
 \hline
 4.5 \\
 144 \\
 \hline
 648.0 \\
 648.0 \\
 \hline
 \end{array}$$

(7.)

$$\begin{array}{r}
 1 \\
 7 \\
 \hline
 5 \) \ 7 \ (\ 1 \text{ da. } 9 \text{ hr.} \\
 5 \quad 36 \text{ min., } Ans. \\
 \hline
 2 \\
 24 \\
 \hline
 48 \\
 45 \\
 \hline
 3 \\
 60 \\
 \hline
 180 \\
 180 \\
 \hline
 \end{array}$$

(8.)

$$\begin{array}{r}
 7 \\
 16\frac{1}{2} \\
 8 \overline{) 115\frac{1}{2}} \text{ (14 ft. } 5\frac{1}{4} \text{ in.,} \\
 \underline{112} \qquad \text{Ans.} \\
 3.5 \\
 \underline{12} \\
 42.0 \\
 \underline{40} \\
 \frac{2}{8} = \frac{1}{4}
 \end{array}$$

(9.)

$$\begin{array}{r}
 .125 \text{ bbl.} \\
 31\frac{1}{2} \\
 \hline
 3.9375 \text{ gal.} \\
 \underline{4} \\
 3.7500 \text{ qt.} \\
 \underline{2} \\
 1.5000 \text{ pt.} \\
 \underline{4} \\
 2.0000 \text{ gi.} \\
 3 \text{ gal. } 3 \text{ qt. } 1 \text{ pt. } 2 \text{ gi., } \text{Ans.}
 \end{array}$$

(10.)

$$\begin{array}{r}
 .92 \text{ da.} \\
 \underline{24} \\
 22.08 \text{ hr.} \\
 \underline{60} \\
 4.80 \text{ min.} \\
 \underline{60} \\
 48.00 \text{ sec.} \\
 22 \text{ hr. } 4 \text{ min. } 48 \text{ sec., } \text{Ans.}
 \end{array}$$

(11.)

$$\begin{array}{r}
 .4156 \text{ cwt.} \\
 \underline{100} \\
 41.5600 \text{ lb.} \\
 \underline{16} \\
 8.96 \text{ oz.} \\
 41 \text{ lb. } 8.96 \text{ oz., } \text{Ans.}
 \end{array}$$

(12.)

$$\begin{array}{r}
 .625 \text{ bu.} \\
 \underline{4} \\
 2.500 \text{ pk.} \\
 \underline{8} \\
 4.000 \text{ qt.} \\
 2 \text{ pk. } 4 \text{ qt., } \text{Ans.}
 \end{array}$$

(13.)

$$\begin{array}{r}
 .008 \text{ mi.} \\
 \underline{320} \\
 2.560 \text{ rd.} \\
 \underline{16\frac{1}{2}} \\
 9.240 \text{ ft.} \\
 \underline{12} \\
 2.880 \text{ in.} \\
 2 \text{ rd. } 9 \text{ ft. } 2.88 \text{ in., } \text{Ans.}
 \end{array}$$

$$\begin{array}{r}
 (14.) \\
 .659 \text{ wk.} \\
 \underline{\quad 7 \quad} \\
 4.613 \text{ da.} \\
 \underline{\quad 24 \quad} \\
 14.712 \text{ hr.} \\
 \underline{\quad 60 \quad} \\
 42.720 \text{ min.}
 \end{array}$$

$$\begin{array}{r}
 42.720 \text{ min.} \\
 \underline{\quad 60 \quad} \\
 43.20 \text{ sec.} \\
 4 \text{ da. } 14 \text{ hr. } 42 \text{ min. } 43.2 \text{ sec.,} \\
 \text{Ans.}
 \end{array}$$

$$\begin{array}{r}
 (15.) \\
 .9 \text{ lb.} \\
 \underline{\quad 16 \quad} \\
 14.4 \text{ oz., Ans.}
 \end{array}$$

Art. 199.

$$\begin{array}{r}
 (2.) \\
 4 \overline{) 6048} \text{ gi.} \\
 2 \overline{) 1512} \text{ pt.} \\
 4 \overline{) 756} \text{ qt.} \\
 63 \overline{) 189} \text{ gal.} \\
 \quad 3 \text{ hhd., Ans.}
 \end{array}$$

$$\begin{array}{r}
 (3.) \\
 2 \overline{) 3199} \text{ pt.} \\
 8 \overline{) 1599} \text{ qt.} + 1 \text{ pt.} \\
 4 \overline{) 199} \text{ pk.} + 7 \text{ qt.} \\
 \quad 49 \text{ bu.} + 3 \text{ pk.} \\
 49 \text{ bu. } 3 \text{ pk. } 7 \text{ qt. } 1 \text{ pt., Ans.}
 \end{array}$$

$$\begin{array}{r}
 (4.) \\
 60 \overline{) 3155692.6} \text{ sec.} \\
 60 \overline{) 52594} \text{ 8 min.} + 46 \text{ sec.} \\
 24 \overline{) 8765} \text{ hr.} + 48 \text{ min.} \\
 \quad 365 \text{ da.} + 5 \text{ hr.} \\
 365 \text{ da. } 5 \text{ hr. } 48 \text{ min. } 46 \text{ sec.,} \\
 \text{Ans.}
 \end{array}$$

$$\begin{array}{r}
 (5.) \\
 24 \overline{) 85894} \text{ gr.} \\
 20 \overline{) 3578} \text{ pwt.} + 22 \text{ gr.} \\
 12 \overline{) 178} \text{ oz.} + 18 \text{ pwt.} \\
 \quad 14 \text{ lb.} + 10 \text{ oz.} \\
 14 \text{ lb. } 10 \text{ oz. } 18 \text{ pwt. } 22 \text{ gr.,} \\
 \text{Ans.}
 \end{array}$$

$$\begin{array}{r}
 (6.) \\
 100 \overline{) 51570} \text{ lb.} \\
 20 \overline{) 515} \text{ cwt.} + 70 \text{ lb.} \\
 \quad 25 \text{ T.} + 15 \text{ cwt.} \\
 25 \text{ T. } 15 \text{ cwt. } 70 \text{ lb., Ans.}
 \end{array}$$

$$\begin{array}{r}
 (7.) \\
 16 \overline{) 40607} \text{ oz.} \\
 100 \overline{) 2537} \text{ lb.} + 15 \text{ oz.} \\
 \quad 25 \text{ cwt.} + 37 \text{ lb.} \\
 25 \text{ cwt. } 37 \text{ lb. } 15 \text{ oz., Ans.}
 \end{array}$$

(8.)

$$\begin{array}{r|l} 20 & 3000 \text{ pwt.} \\ 12 & 150 \text{ oz.} \\ \hline & 12 \text{ lb. 6 oz., } \textit{Ans.} \end{array}$$

(9.)

$$\begin{array}{r|l} 60 & 12060 \text{ lb.} \\ \hline & 201 \text{ bu., } \textit{Ans.} \end{array}$$

(10.)

$$\begin{array}{r|l} 12 & 120400 \text{ pens.} \\ 12 & 10033 \text{ doz.} + 4 \\ \hline & 836 \text{ gro.} + 1 \text{ doz.} \\ 836 \text{ gross 1 doz. 4, } \textit{Ans.} \end{array}$$

(11.)

$$\begin{array}{r|l} 12 & 2734 \text{ eggs.} \\ \hline & 227\frac{5}{6} \text{ doz., } \textit{Ans.} \end{array}$$

(12.)

$$\begin{array}{r|l} 20 & 5020 \text{ balls.} \\ \hline & 251 \text{ score, } \textit{Ans.} \end{array}$$

(13.)

$$\begin{array}{r|l} 24 & 10738 \text{ sheets.} \\ 20 & 447 \text{ qui.} + 10 \text{ sh.} \\ \hline & 22 \text{ reams} + 7 \text{ qui.} \\ 22 \text{ reams 7 qui. 10 sh., } \textit{Ans.} \end{array}$$

(14.)

$$\begin{array}{r|l} 20 & 6048 \text{ quires.} \\ 2 & 302 \text{ reams} + 8 \text{ qui.} \\ \hline & 151 \text{ bun.} + 8 \text{ qui.,} \\ & \textit{Ans.} \end{array}$$

(15.)

$$\begin{array}{r|l} 12 & 1242 \text{ in.} \\ 3 & 103 \text{ ft.} + 6 \text{ in.} \\ \hline & 34 \text{ yd.} + 1 \text{ ft.} \\ 34 \text{ yd. 1 ft. 6 in., } \textit{Ans.} \end{array}$$

(16.)

$$\begin{array}{r|l} 16\frac{1}{2} & 21120 \text{ ft.} \\ 320 & 1280 \text{ rd.} \\ \hline & 4 \text{ mi., } \textit{Ans.} \end{array}$$

(17.)

$$\begin{array}{r|l} 8 & 325 \text{ eighths.} \\ \hline & 40\frac{5}{8} \text{ yd., } \textit{Ans.} \end{array}$$

(18.)

$$\begin{array}{r|l} 160 & 25600 \text{ sq. rd.} \\ \hline & 160 \text{ acres, } \textit{Ans.} \end{array}$$

(19.)

$$\begin{array}{r|l} 144 & 346720 \text{ sq. in.} \\ 9 & 2407 \text{ sq. ft.} + 112 \text{ sq. in.} \\ 30\frac{1}{4} & 267 \text{ sq. yd.} + 4 \text{ sq. ft.} \\ \hline & 8 \text{ sq. rd.} + 25 \text{ sq. yd.} \\ 8 \text{ sq. rd. 25 sq. yd. 4 sq. ft.} \\ & 112 \text{ sq. in., } \textit{Ans.} \end{array}$$

(20.)

$$\begin{array}{r|l} 27 & 786 \text{ cu. ft.} \\ & 29 \text{ cu. yd. } 3 \text{ cu. ft., } Ans. \end{array}$$

(21.)

$$\begin{array}{r|l} 128 & 43860 \text{ cu. ft.} \\ & 342 \text{ Cd. } 84 \text{ cu. ft., } Ans. \end{array}$$

(22.)

$$\begin{array}{r|l} 1728 & 165888 \text{ cu. in.} \\ 16 & 96 \text{ cu. ft.} \\ & 6 \text{ cd. ft., } Ans. \end{array}$$

(23.)

$$\begin{array}{r|l} 100 & 3172 \text{ lb.} \\ & 31.72 \text{ quintals, } Ans. \end{array}$$

(24.)

$$\begin{array}{r|l} 2 & 1236 \text{ pt.} \\ 8 & 618 \text{ qt.} \\ & 77 \text{ pk. } \frac{1}{2} \text{ qt., } Ans. \end{array}$$

(25.)

$$\begin{array}{r|l} 24 & 23597 \text{ gr.} \\ 20 & 983 \text{ pwt. } + 5 \text{ gr.} \\ 12 & 49 \text{ oz. } + 3 \text{ pwt.} \\ & 4 \text{ lb. } + 1 \text{ oz.} \end{array}$$

4 lb. 1 oz. 3 pwt. 5 gr., *Ans.*

(26.)

$$\begin{array}{r|l} 60 & 86400 \text{ min.} \\ 24 & 1440 \text{ hr.} \\ 7 & 60 \text{ da.} \\ & 8 \text{ wk. } 4 \text{ da., } Ans. \end{array}$$

(27.)

$$\begin{array}{r|l} 60 & 28635 \text{ sec.} \\ 60 & 477 \text{ min. } + 15 \text{ sec.} \\ & 7 \text{ hr. } + 57 \text{ min.} \\ & 7 \text{ hr. } 57 \text{ min. } 15 \text{ sec., } Ans. \end{array}$$

(28.)

$$\begin{array}{r|l} 24 & 10800 \text{ hr.} \\ 30 & 450 \text{ da.} \\ & 15 \text{ mo., } Ans. \end{array}$$

(29.)

$$\begin{array}{r|l} 24 & 17647 \text{ sheets.} \\ 20 & 735 \text{ qui. } + 7 \text{ sh.} \\ & 36 \text{ rm. } 15 \text{ qui. } 7 \text{ sh.,} \\ & \text{Ans.} \end{array}$$

(30.)

$$\begin{array}{r|l} 56 & 14000 \text{ lb.} \\ & 250 \text{ bu., } Ans. \end{array}$$

(31.)

$$\begin{array}{r|l} 8 & 27072 \text{ qt.} \\ 4 & 3384 \text{ pk.} \\ & 846 \text{ bu., } Ans. \end{array}$$

(32.)

$$\begin{array}{r|l}
 2 & 76742 \text{ pt.} \\
 4 & 38371 \text{ qt.} \\
 31\frac{1}{2} & 9592 \text{ gal.} + 3 \text{ qt.} \\
 & 304 \text{ bbl.} + 16 \text{ gal.}
 \end{array}$$

304 bbl. 16 gal. 3 qt., *Ans.*

33. 1 T. 15 cwt. 36 lb. = 3536 lb.;

9 cts. \times 3536 = \$318.24, *Ans.*

34. 2 lb. 8 oz. 12 pwt. = 652 pwt.;

\$.72 \times 652 = \$469.44, *Ans.*

35. 3 mi. = 15840 ft.; 12 cts. \times 15840 = \$1900.80, *Ans.*

36. 1 hhd. = 504 pt.; \$.40 \times 504 = \$201.60, *Ans.*

37. 2 bu. 1 pk. 6 qt. = 78 qt.; 14 cts. \times 78 = \$10.92, *Ans.*

38. \$1.50 \times (2760 \div 60) = \$69, *Ans.*

39. \$2.625 \times 7 \times 12 = \$220.50, *Ans.*

40. 80 sq. rd. \times 30 $\frac{1}{4}$ \times 9 = 21780 sq. ft.;

\$.25 \times 21780 = \$5445, *Ans.*

41. 128 pt. = 2 bu.; \$3.50 \times 2 = \$7, *Ans.*

42. 240 cd. ft. = 30 Cd.; \$4 $\frac{1}{2}$ \times 30 = \$135, *Ans.*

43. 4000 lb. = 40 cwt.; \$.75 \times 40 = \$30, *Ans.*

44. 360 qt. = 90 gal.; \$.32 \times 90 = \$28.80, *Ans.*

45. 16 reams = 320 quires; \$.20 \times 320 = \$64, *Ans.*

46. 5 bbl. = 1000 lb.; 9 cts. \times 1000 = \$90, *Ans.*

47. 8 gross = 1152; 5 cts. \times 1152 = \$57.60, *Ans.*

48. 3 pk. = 45 lb. clover-seed ; $\$.125 \times 45 = \5.625 , *Ans.*

49. 1 T. = 2000 lb. = 40 bu. corn meal ;

$$\$1.20 \times 40 = \$48, \text{ } Ans.$$

50. 3 T. 17 cwt. 20 lb. = 3.86 T. ;

$$\$22.75 \times 3.86 = \$87.815, \text{ } Ans.$$

51. $\$.852 \div \$.12 = 71 \text{ pt.} = 8 \text{ gal. } 3 \text{ qt. } 1 \text{ pt.}, \text{ } Ans.$

52. 1960 lb. oats = $61\frac{1}{4}$ bu., $\$.56 \times 61\frac{1}{4} = \34.30 , *Ans.*

Art. 200.

2. 1 wk. = 10080 min. ; 3 da. 2 hr. 40 min. = 4480 min. ;

$$4480 \div 10080 = \frac{4480}{10080} = \frac{4}{9}, \text{ } Ans.$$

3. 2 lb. = 480 pwt. ; 7 oz. 4 pwt. = 144 pwt. ;

$$144 \div 480 = \frac{144}{480} = \frac{3}{10}, \text{ } Ans.$$

4. 4 bu. = 128 qt. ; 1 pk. 6 qt. = 14 qt. ;

$$14 \div 128 = \frac{14}{128} = \frac{7}{64}, \text{ } Ans.$$

5. 1 bbl. = 126 qt. ; 15 gal. 3 qt. = 63 qt. ;

$$63 \div 126 = \frac{63}{126} = \frac{1}{2}, \text{ } Ans.$$

6. 1 yd. = 36 in. ; 1 ft. 9.6 in. = 21.6 in. ;

$$21.6 \div 36 = \frac{21.6}{36} = \frac{3}{5}, \text{ } Ans.$$

7. 3 pk. = 24 qt. ; 2 pk. 4 qt. = 20 qt. ;

$$20 \div 24 = \frac{20}{24} = \frac{5}{6}, \text{ } Ans.$$

8. 1 da. = 1440 min. ; 7 hr. 12 min. = 432 min. ;

$$432 \div 1440 = \frac{432}{1440} = \frac{3}{10}, \text{ } Ans.$$

9. 2 lb. = 32 oz. ; $10\frac{2}{3}$ oz. = $3\frac{2}{3}$ oz. ;

$$\frac{3\frac{2}{3}}{32} \div 32 = \frac{1}{3}, \text{ } Ans.$$

10. 2 Cd. = 256 cu. ft.; 4 cd. ft. 8 cu. ft. = 72 cu. ft.;
 $72 \div 256 = \frac{72}{256} = .28125$, *Ans.*

11. 3 bu. = 96 qt.; 3 pk. 1.12 qt. = 25.12 qt.;
 $25.12 \div 96 = .26166+$, *Ans.*

12. 2 rd. 8 ft. = 492 in.; 4 yd. $1\frac{1}{2}$ ft. = 162 in.;
 $162 \div 492 = .32926+$, *Ans.*

13. 1 T. 5 cwt. = 2500 lb.; $25 \div 2500 = .01$, *Ans.*

14. 6 gal. = 192 gi.; 3 qt. 1 pt. 2 gi. = 30 gi.;
 $30 \div 192 = .15625$, *Ans.*

15. 1 wk. 3 da. = 240 hr.; 4 da. 9 hr. = 105 hr.;
 $105 \div 240 = .4375$, *Ans.*

16. 5 yd. 1 ft. = 16 ft.; 2 yd. 2 ft. = 8 ft.;
 $8 \div 16 = .5$, *Ans.*

17. 1 ream = 480 sheets; $150 \div 480 = .3125$, *Ans.*

18. 1 hhd. = 252 qt.; 28 gal. 2 qt. = 114 qt.;
 $114 \div 252 = \frac{114}{252} = \frac{19}{42}$; $\frac{42}{42} - \frac{19}{42} = \frac{23}{42}$, *Ans.*

19. 1 bbl. = 196 lb.; $24\frac{1}{2}$ lb. \div 196 lb. = $\frac{1}{8}$, *Ans.*

20. 15 cwt. 21 lb. = 1521 lb.; 2 cwt. 11 lb. = 211 lb.;
 $211 \div 1521 = \frac{211}{1521}$, *Ans.*

21. 4 gal. 3 qt. = 152 gi.; 3 qt. 2 gi. = 26 gi.;
 $26 \div 152 = \frac{13}{76}$, *Ans.*

22. 54 Cd. = 6912 cu. ft.;
 4800 cu. ft. \div 6912 cu. ft. = $\frac{25}{36}$, *Ans.*

23. 3 bbl. = 9408 oz.; 110 lb. 4 oz. = 1764 oz.;
 $1764 \div 9408 = \frac{3}{16}$, *Ans.*

Art. 201.

(3.)

bu.	lb.
46	36
43	50
49	23
50	56
<hr/>	
190	45, <i>Ans.</i>

(4.)

	bu.
48.4 bu.	= 48.4
2626 lb.	= 46.89 +
36 $\frac{3}{4}$ bu.	= 36.75
41 bu. 52 lb.	= 41.93
<hr/>	
	173.97

$$$.75 \times 173.97 = \$130.48, \text{ Ans.}$$

(5.)

	T.
1.125 T.	= 1.125
1 $\frac{3}{8}$ T.	= 1.6
2750 lb.	= 1.375
<hr/>	
	4.1

$$\$15 \times 4.1 = \$61.50, \text{ Ans.}$$

(6.)

gro.	doz.	
2	5	10
3	7	9
4	6	11
<hr/>		
10	8	6, <i>Ans.</i>

(7.)

$\frac{5}{8}$ da.	= 15 hr.
$\frac{7}{15}$ hr.	= 28 min.
<hr/>	
	15 hr. 28 min., <i>Ans.</i>

(8.)

$\frac{6}{7}$ hhd.	= 54 gal.
$\frac{5}{8}$ of 10 gal.	= 6 gal. 1 qt.
	60 gal. 1 qt.,
	<i>Ans.</i>

(9.)

	cwt.	lb.	oz.
22 $\frac{1}{4}$ cwt.	= 22	57	2 $\frac{2}{7}$
26 $\frac{1}{8}$ lb.	=	26	14
			14
	<hr/>		
	22	84	14 $\frac{2}{7}$,
			<i>Ans.</i>

(10.)

Cd.	cd. ft.	cu. ft.
5	7	0
2	2	12
	6	15
7	3	0
3	0	2
<hr/>		
19	3	13, <i>Ans.</i>

(11.)

yd.	ft.	in.
7	2	0
5	1	3
	2	$9\frac{1}{2}$
3	1	$6\frac{1}{2}$
	2	9
4	1	6
22	2	10, <i>Ans.</i>

(12.)

hhd.	gal.	qt.	pt.	gi.
1	42	0	0	0
	36	3	1	1
		3	1	0
		2	0	3
			1	3
2	17	2	0	3, <i>Ans.</i>

Art. 202.

(5.)

cwt.	lb.	oz.
1	28	0
	56	8
	71	8, <i>Ans.</i>

(8.)

sq. yd.	sq. ft.	sq. in.
29	6	84
16	2	96
13	3	132, <i>Ans.</i>

(6.)

Cd.	cd. ft.	cu. ft.
42	5	0
16	6	12
25	6	4, <i>Ans.</i>

(9.)

	cwt.	lb.	oz.
$8\frac{9}{10}$ cwt.	= 8	90	0
$48\frac{3}{8}$ lb.	=	48	6
	8	41	10, <i>Ans.</i>

(7.)

T.	cwt.	lb.	oz.
7	5	18	6
2	9	12	10
4	16	5	12, <i>Ans.</i>

(10.)

	lb.	oz.	pwt.
5	4	8	
$\frac{3}{40}$ lb. =		18	
	5	3	10, <i>Ans.</i>

(11.)

wk.	da.	hr.	min.	sec.
2	3	20	00	00
	4	14	42	43.2
1	6	5	17	16.8
<i>Ans.</i>				

(12.)

	da.	hr.	min.
$\frac{1}{4}$ wk. =	1	18	00
.9 da. =		21	36
		20	24,
<i>Ans.</i>			

(13.)

	qt.
$\frac{3}{4}$ pk. =	6
.0625 bu. =	2
	4, <i>Ans.</i>

(14.)

	gal.	qt.
$5\frac{1}{2}$ bbl. =	173	1
$\frac{4}{7}$ hhd. =	36	0
	137	1, <i>Ans.</i>

(15.)

gal.	qt.	pt.
14	1	1
10	3	
29	0	1
54	1	

63 gal. — 54 gal. 1 qt.
= 8 gal. 3 qt., *Ans.*

(16.)

Cd.	cd. ft.	cu. ft.
26	7	00
30	4	10
37	4	8
95	0	2
125	6	0
95	0	2
30	5	14, <i>Ans.</i>

Art. 203.

(2.)

yr.	mo.	da.
1883	9	21
1879	6	12
4	3	9, <i>Ans.</i>

(3.)

yr.	mo.	da.
1881	10	3
1872	1	4
9	8	29, <i>Ans.</i>

(4.)

yr.	mo.	da.	hr.
1883	7	15	14
1873	4	10	9
10	3	5	5, <i>Ans.</i>

6. In Jan. there were remaining 15 da.; in Feb., 28; in Mar., 31; in Apr., 30; in May, 31; in June, 30, and in July, 10 : total, 175 da., *Ans.*

7. In May are 3 da.; in June, 30; July, 31; Aug., 31; Sept., 30; Oct., 31; Nov., 30; Dec., 31; Jan., 31; and in Feb., 10: total, 258 da., *Ans.*

(8.)

yr.	mo.	da.
1883	5	24
1870	1	3
13	4	21, <i>Ans.</i>

Art. 204.

(2.)

hhd.	gal.	qt.
6	20	3
		5
31	40	3, <i>Ans.</i>
hhd.	gal.	qt.
6	20	3
		8
50	40	0, <i>Ans.</i>
hhd.	gal.	qt.
6	20	3
		15
94	59	1, <i>Ans.</i>

(3.)

rd.	yd.	ft.	in.
2	4	2	6
			6
17	11½	0	0
17	1	1	6, <i>Ans.</i>
rd.	yd.	ft.	in.
2	4	2	6
			9
25	41½	1	6
			2
51	41½	0	0
51	4	1	6, <i>Ans.</i>

(4.)

cu. yd.	cu. ft.	cu. in.
9	15	520
<hr/>		
		7
66	26	184, <i>Ans.</i>

cu. yd.	cu. ft.	cu. in.
9	15	520
<hr/>		
		14
133	25	368, <i>Ans.</i>

(5.)

hr.	min.	sec.
5	42	50
<hr/>		
		12
68	34	00

da	hr.	min.	sec.
0	5	42	50
<hr/>			
			6
1	10	17	00
<hr/>			
			6
8	13	42	00,
<hr/>			
<i>Ans.</i>			

(6.)

Cd.	cd. ft.	cu. ft.
26	3	12
<hr/>		
		2
52	7	8
<hr/>		
		9
476	3	8, <i>Ans.</i>

Cd.	cd. ft.	cu. ft.
26	3	12
<hr/>		
		4
105	7	0
<hr/>		
		6
635	2	0, <i>Ans.</i>

(7.)

lb.	oz.	pwt.	gr.
0	1	12	16
<hr/>			
			12
1	7	12	0,
<hr/>			
<i>Ans.</i>			

(8.)

T.	cwt.	lb.
1	3	50
<hr/>		
		6
7	1	00
<hr/>		
		8
56	8	00, <i>Ans.</i>

9. $.36 \text{ cwt.} \times 12 = 36 \text{ lb.} \times 12 = 432 \text{ lb., } Ans.$

10. $.12 \text{ hr.} \times 18 = 7 \text{ min. } 12 \text{ sec.} \times 18$
 $= 2 \text{ hr. } 9 \text{ min. } 36 \text{ sec., } Ans.$

11. $\frac{5}{12} \text{ lb.} \times 24 = 5 \text{ oz.} \times 24 = 10 \text{ lb., } Ans.$

12. $.875 \text{ hhd.} \times 9 = 55 \text{ gal. } 1 \text{ pt.} \times 9$
 $= 7 \text{ hhd. } 55 \text{ gal. } 0 \text{ qt. } 1 \text{ pt., } Ans.$
13. $\frac{4}{5} \text{ of } .225 \times 8 = 57 \text{ rd. } 9 \text{ ft. } 10.8 \text{ in.} \times 8$
 $= 1 \text{ mi. } 140 \text{ rd. } 13 \text{ ft. } 2.4 \text{ in., } Ans.$
14. $6\frac{5}{16} \text{ A.} \times 6 = 6 \text{ A. } 50 \text{ sq. rd.} \times 6$
 $= 37 \text{ A. } 140 \text{ sq. rd., } Ans.$
15. $3.96 \text{ in.} \times 36 = 11 \text{ ft. } 10.56 \text{ in., } Ans.$
16. $.216 \text{ gr.} \times 15 = 3.24 \text{ gr., } Ans.$
17. $\frac{4}{7} \text{ mo.} \times 21 = 2 \text{ wk. } 2 \text{ da.} \times 21 = 12 \text{ mo. or } 1 \text{ yr., } Ans.$
18. $28 \text{ gal. } 2 \text{ qt. } 1 \text{ pt.} \times 5 = 143.125 \text{ gal.;}$
 $\$1.375 \times 143.125 = \$196.796, Ans.$
19. $41 \text{ bu. } 3 \text{ pk.} \times 4 = 167 \text{ bu.; } \$.75 \times 167 = \$125.25, Ans.$

Art. 205.

$$\begin{array}{r} (2.) \\ 9 \overline{) 376 \text{ gal. } 3 \text{ qt. } 1 \text{ pt.}} \\ \underline{41 \text{ gal. } 3 \text{ qt. } 1 \text{ pt.,}} \end{array} Ans.$$

$$\begin{array}{r} (5.) \\ 9 \overline{) 192 \text{ bu. } 3 \text{ pk. } 1 \text{ qt. } 1 \text{ pt.}} \\ \underline{21 \text{ bu. } 1 \text{ pk. } 5 \text{ qt. } 1 \text{ pt.,}} \end{array} Ans.$$

$$\begin{array}{r} (3.) \\ 6 \overline{) 328 \text{ yd. } 1 \text{ ft. } 3 \text{ in.}} \\ \underline{54 \text{ yd. } 2 \text{ ft. } 2\frac{1}{2} \text{ in.,}} \end{array} Ans.$$

$$\begin{array}{r} (6.) \\ 7 \overline{) 45 \text{ T. } 15 \text{ cwt. } 25 \text{ lb.}} \\ \underline{6 \text{ T. } 10 \text{ cwt. } 75 \text{ lb.,}} \end{array} Ans.$$

$$\begin{array}{r} (4.) \\ 12 \overline{) 9 \text{ hhd. } 28 \text{ gal. } 2 \text{ qt.}} \\ \underline{49 \text{ gal. } 2 \text{ qt. } 1 \text{ pt.,}} \end{array} Ans.$$

$$\begin{array}{r} (7.) \\ 6 \overline{) 196 \text{ Cd. } 4 \text{ cd. ft. } 12 \text{ cu. ft.}} \\ 6 \overline{) 32 \text{ Cd. } 6 \text{ cd. ft. } 2 \text{ cu. ft.}} \\ \underline{5 \text{ Cd. } 3 \text{ cd. ft. } 11 \text{ cu. ft.}} \end{array} Ans.$$

(8.)

$$\begin{array}{r|l} 9 & 282 \text{ bu. } 3 \text{ pk. } 1 \text{ qt. } 1 \text{ pt.} \\ & 31 \text{ bu. } 1 \text{ pk. } 5 \text{ qt. } 1 \text{ pt.,} \\ & \text{Ans.} \end{array}$$

$$\begin{array}{r|l} 10 & 282 \text{ bu. } 3 \text{ pk. } 1 \text{ qt. } 1 \text{ pt.} \\ & 28 \text{ bu. } 1 \text{ pk. } 0 \text{ qt. } 1.9 \text{ pt.} \\ & \text{Ans.} \end{array}$$

$$\begin{array}{r|l} 12 & 282 \text{ bu. } 3 \text{ pk. } 1 \text{ qt. } 1 \text{ pt.} \\ & 23 \text{ bu. } 2 \text{ pk. } 2 \text{ qt. } \frac{1}{4} \text{ pt.,} \\ & \text{Ans.} \end{array}$$

(9.)

$$\begin{array}{r|l} 3 & 254 \text{ yd. } 4 \text{ ft. } 3\frac{1}{3} \text{ in.} \\ 7 & 84 \text{ yd. } 3 \text{ ft. } 5\frac{1}{3} \text{ in.} \\ & 12 \text{ yd. } 0 \text{ ft. } 5\frac{5}{6} \text{ in., Ans.} \end{array}$$

$$\begin{array}{r|l} 6 & 254 \text{ yd. } 4 \text{ ft. } 3\frac{1}{3} \text{ in.} \\ 7 & 42 \text{ yd. } 1 \text{ ft. } 8\frac{5}{6} \text{ in.} \\ & 6 \text{ yd. } 0 \text{ ft. } 2\frac{5}{6} \text{ in., Ans.} \end{array}$$

(10.)

$$\begin{array}{r|l} 3 & 19 \text{ Cd. } 2 \text{ cd. ft. } 11 \text{ cu. ft.} \\ 5 & 6 \text{ Cd. } 3 \text{ cd. ft. } 9 \text{ cu. ft.} \\ & 1 \text{ Cd. } 2 \text{ cd. ft. } 5 \text{ cu. ft.,} \end{array}$$

(11.)

$$\begin{array}{r|l} 6 & 11 \text{ oz. } 3 \text{ pwt.} \\ & 1 \text{ oz. } 17 \text{ pwt. } 4 \text{ gr., Ans.} \end{array}$$

(12.)

$$\begin{aligned} 3 \text{ mi.} \times 320 \times 16\frac{1}{2} &= 15840 \text{ ft.;} \\ 15840 \text{ ft.} \div 18 &= 880 \text{ rails,} \\ &\text{Ans.} \end{aligned}$$

(13.)

$$\begin{array}{r|l} 3 & 7 \text{ T. } 15 \text{ cwt. } 66 \text{ lb. } 4 \text{ oz.} \\ 6 & 2 \text{ T. } 11 \text{ cwt. } 88 \text{ lb. } 12 \text{ oz.} \\ & 8 \text{ cwt. } 64 \text{ lb. } 12\frac{2}{3} \text{ oz.,} \\ & \text{Ans.} \end{array}$$

$$14. \quad 1000 \text{ mi.} \div 24 = 41 \text{ mi. } 213 \text{ rd. } 5 \text{ ft. } 6 \text{ in., Ans.}$$

$$\begin{aligned} 15. \quad 4 \text{ mi. sq.} &= 16 \text{ sq. mi.} = 10240 \text{ A.;} \\ 10240 \text{ A.} \div 62 &= 165 \text{ A. } 25 \text{ sq. rd. } 24.4 \text{ sq. yd., nearly,} \\ &\text{Ans.} \end{aligned}$$

Art. 218.

$$3. \quad 450 \text{ sq. ft.} \div 8 \text{ ft. } 4 \text{ in.} = 54; 54 \text{ ft., length, Ans.}$$

$$4. \quad (48 \text{ ft.} \times 10 \times 144) \div 8 \times 8 = 1080; 1080 \text{ tiles, Ans.}$$

$$5. \quad \$2.70 \times (312 \text{ ft.} \times 6\frac{1}{2} \div 9) = \$608.40, \text{ Ans.}$$

6. $\$.45 \times (27 \text{ ft.} \times 48 \text{ ft. } 6 \text{ in.} \div 9) = \$65.475, \text{ Ans.}$
7. $60 \text{ rd.} \times 60 \div 160 = 22\frac{1}{2} \text{ acres, Ans.}$
8. $(25 \text{ ft.} \times 25) - (12.5 \times 12.5 \times 2) = 312\frac{1}{2} \text{ sq. ft., Ans.}$
9. $\$68.50 \times (80 \text{ rd.} \times 75 \div 160) = \$2568.75, \text{ Ans.}$
10. $24 \text{ A.} \times 160 \div 120 = 32 \text{ rd., Ans.}$
11. $\$1.35 \times (45 \text{ ft.} \times 6.5 \div 9) = \$43.87\frac{1}{2}, \text{ Ans.}$
12. $15 \text{ ft.} \times 12 \div 30 = 6, \text{ number of strips;}$
 $16\frac{1}{2} \text{ ft.} \div 3 = 5\frac{1}{2} \text{ yd., length of strip;}$
 $5\frac{1}{2} \text{ yd.} \times 6 = 33 \text{ yd., Ans.}$
13. $46\frac{1}{2} \text{ ft.} = 15\frac{1}{2} \text{ yd. long;}$
 $(14 \text{ ft. } 9 \text{ in.}) \div 3 \text{ ft. } 9 \text{ in.} = 3\frac{1}{5} \text{ times;}$
 $15\frac{1}{2} \text{ yd.} \times 4 = 62 \text{ yd.; } \$.25 \times 62 = \$15.50, \text{ Ans.}$
14. $24 \text{ ft. } 9 \text{ in.} + 9 \text{ in.} = 25\frac{1}{2} \text{ ft.} = 8\frac{1}{2} \text{ yd., length of 1 strip;}$
 $17\frac{1}{2} \text{ ft.} \div 1\frac{1}{4} \text{ yd.} = 210 \text{ in.} \div 45 \text{ in.}$
 $= 4\frac{2}{3} \text{ times, or 5 strips;}$
 $8\frac{1}{2} \text{ yd.} \times 5 = 42\frac{1}{2} \text{ yd., Ans.}$
15. $24 \text{ ft. } 9 \text{ in.} + 6 \text{ in.} = 25 \text{ ft. } 3 \text{ in.}$
 $= 8\frac{5}{12} \text{ yd., length of 1 strip;}$
 $17\frac{1}{2} \text{ ft.} \div \frac{3}{4} \text{ yd.} = 210 \text{ in.} \div 27 \text{ in.}$
 $= 7\frac{7}{9} \text{ times, or 8 strips;}$
 $8\frac{5}{12} \text{ yd.} \times 8 = 67\frac{1}{3} \text{ yd.; } \$1.65 \times 67\frac{1}{3} = \$111.10, \text{ Ans.}$
16. $104\frac{3}{4} \text{ ft.} \times 20\frac{1}{3} \div 100 = 21.29\frac{1}{2} \text{ squares, Ans.}$
17. $(40 \text{ ft.} + 36.5 \text{ ft.}) \times 2 \times 22.25 = 3404.25 \text{ sq. ft., sides;}$
 $40 \text{ ft.} \times 36.5 = 1460 \text{ sq. ft., ceiling;}$
 $\$.36 \times (3404.25 \div 1460 - 1375) \div 9 = \$139.57, \text{ Ans.}$
18. $\overline{36 \text{ ft.} \times 24} \div \overline{16 \text{ ft.} \times .75} = 72 \text{ planks, Ans.}$
19. $\$.75 \times (8\frac{1}{4} \times 5\frac{1}{3} \times 6) = \$198, \text{ Ans.}$
20. $(53\frac{1}{3} \text{ ft.} \times 28) \div (1\frac{1}{3} \text{ ft.} \times 1\frac{1}{3}) = 840 \text{ sods, Ans.}$

21. $46 \text{ ft.} \times 20 \times 2 + 46 \text{ sq. ft., extra courses}$
 $= 1886 \text{ sq. ft., area;}$
 $1886 \text{ sq. ft.} \times 144 \div (4 \text{ in.} \times 6) = 11316 \text{ shingles, Ans.}$
22. $\$.30 \times (21\frac{3}{8} + 14\frac{5}{8} \times 2 \times 10.5) \div 9 = \$25.55, \text{ Ans.}$
23. $\$15.375 \times (64.75 \text{ ft.} \times 45) \div 100 = \$447.989, \text{ Ans.}$
24. $560 \text{ rd.} \div 4 = 140 \text{ rd.}; 140 \text{ rd.} \times 140 = 19600 \text{ sq. rd.};$
 $19600 \text{ sq. rd.} \div 160 = 122\frac{1}{2} \text{ acres, Ans.}$
25. $\$.75 \times (52 \text{ ft.} \times 30 \div 100) = \$11.70, \text{ Ans.}$

Art. 224.

3. $38 \text{ in.} \times 26 \times 20 = 19760 \text{ cu. in., Ans.}$
4. $1224 \text{ cu. ft.} \div \overline{12 \text{ ft.} \times 12} = 8\frac{1}{2} \text{ ft., Ans.}$
5. $8.5 \text{ ft.} \times 6 \times 4\frac{1}{3} = 221 \text{ cu. ft., Ans.}$
6. $36 \text{ ft.} \times 24 \times 6\frac{1}{2} \div 27 = 208 \text{ cu. yd., Ans.}$
7. $4.75 \text{ ft.} \times 4.75 \times 4.75$
 $= 3 \text{ cu. yd. } 26 \text{ cu. ft. } 297 \text{ cu. in., Ans.}$
8. $20\frac{7}{12} \text{ ft.} \times 3\frac{1}{3} \times 2\frac{1}{2} = 7 \text{ cu. yd. } 11 \text{ cu. ft. } 200 \text{ cu. in., Ans.}$
9. $5 \text{ ft.} \times 5 \times 6.4 = 5 \text{ cu. yd. } 25 \text{ cu. ft., Ans.}$
10. $10 \text{ ft.} \times 9 \times 8 \div 10 = 72; 72 \text{ min.} = 1 \text{ hr. } 12 \text{ min., Ans.}$
11. $30 \text{ ft.} \times 8 \times 6\frac{1}{2} \div 128 = 12\frac{3}{16} \text{ Cd., Ans.}$
12. $\overline{128 \text{ ft.} \times 67\frac{1}{2}} \div \overline{90 \text{ ft.} \times 12} = 8 \text{ ft., Ans.}$
13. $\$3.75 \times (12\frac{1}{2} \text{ ft.} \times 8 \times 4\frac{1}{2}) = \$13.18, \text{ Ans.}$
14. $.42 \times (45 \text{ ft.} \times 28 \times 8\frac{1}{2} \div 27) = \$166.60, \text{ Ans.}$
15. $8 \text{ ft.} \times 6 \times 5\frac{1}{3} \div 128 = 2 \text{ Cd., Ans.}$
16. $120 \text{ ft.} \times 6\frac{3}{4} \times 1\frac{1}{2} \div 24\frac{3}{4} = 49\frac{1}{11} \text{ perches, Ans.}$
17. $\$3.50 \times (50 \text{ ft.} \times 25 \times 12 \div 128) = \$410.156, \text{ Ans.}$

$$18. \$1.25 \times (32 \text{ ft.} + 24 \text{ ft.} \times 2 \times 6 \times 1\frac{1}{2} \div 24\frac{3}{4}) = \$50.90, \text{ Ans.}$$

$$19. 128 \text{ cu. ft.} \div 5\frac{1}{3} \text{ ft.} \times 3 = 8 \text{ ft., Ans.}$$

$$20. \$.56 \times (240 \text{ ft.} \times 38 \times 8\frac{1}{2} \div 27) = \$1607.82, \text{ Ans.}$$

$$21. 240 \text{ ft.} \times 6 \times 3 = 4320 \text{ cu. ft.};$$

$$8 \text{ in.} \times 4 \times 2 \times 1000 \div 1728 = 37\frac{1}{27} \text{ cu. ft.};$$

$$\$3.25 \times (4320 \text{ cu. ft.} \div 37\frac{1}{27}) = \$379.08, \text{ Ans.}$$

$$22. 24 \times 18 \times 18 \div 6 \text{ in.} \times 4 \times 3 = 108, \text{ Ans.}$$

$$23. 41\frac{1}{4} \text{ ft.} \times 2 \times 8 \times 1\frac{1}{2} = 1782 \text{ cu. ft.} = 72 \text{ perches};$$

$$41\frac{1}{4} \text{ ft.} \times 33 \times 8 \div 27 = 403\frac{1}{3} \text{ cu. yd.};$$

$$\$3.75 \times 72 + \$.50 \times 403\frac{1}{3} = \$471.66\frac{2}{3}, \text{ Ans.}$$

$$24. (32 \text{ ft.} \times 18 \times 12\frac{1}{2}) \div (10 \text{ cu. ft.} \times 60) = 12 \text{ min., Ans.}$$

$$25. 16 \text{ rd.} + 12 \text{ rd.} \times 2 \times 16\frac{1}{2} = 924 \text{ ft.};$$

allowing 12 ft. for corners, $924 \text{ ft.} - 12 \text{ ft.} = 912 \text{ ft.};$

$$912 \text{ ft.} \times 6 \times 3 \div 24\frac{3}{4} = 663\frac{3}{11} \text{ perches, Ans.}$$

$$26. \$.42 \times (650 \text{ ft.} \times 72 \times 4\frac{1}{2} \div 27) = \$3276, \text{ Ans.}$$

$$27. 37\frac{1}{2} \text{ ft.} + 26 \text{ ft.} \times 2 = 127 \text{ ft.};$$

allowing 8 ft. for corners, $127 \text{ ft.} - 8 \text{ ft.} = 119 \text{ ft.};$

$$119 \text{ ft.} \times 9 \times 2 = 2142 \text{ cu. ft.} = 86.545 \text{ perches};$$

$$\$3.85 \times 86.545 = \$333.20, \text{ Ans.}$$

Art. 226.

$$3. 16 \text{ ft.} \times 10 \div 12 = 13\frac{1}{3} \text{ board ft., Ans.}$$

$$4. 17 \text{ ft.} \times 11 \div 12 = 15\frac{7}{12} \text{ board ft., Ans.}$$

$$5. 22 \text{ ft.} \times 20 \div 12 = 36\frac{2}{3} \text{ board ft., Ans.}$$

$$6. 18 \text{ ft.} \times 15 \div 12 = 22\frac{1}{2} \text{ board ft., Ans.}$$

$$7. 26 \text{ ft.} \times 14\frac{1}{2} \div 12 = 31\frac{5}{12} \text{ board ft., Ans.}$$

$$8. 20 \text{ ft.} \times 21 \div 12 = 35 \text{ board ft., Ans.}$$

9. $12 \text{ ft.} \times 10 \times 2\frac{1}{2} \div 12 = 25 \text{ board ft., Ans.}$
10. $18 \text{ ft.} \times 24 \times 8 \div 12 = 288 \text{ board ft., Ans.}$
11. $16 \text{ ft.} \times 12 \times 4\frac{1}{2} \div 12 = 72 \text{ board ft., Ans.}$
13. $17 \text{ in.} + 11 \div 2 = 14 \text{ in., mean width;}$
 $12 \text{ ft.} \times 14 \times 5 \div 12 = 70 \text{ board ft.};$
 $6 \text{ cts.} \times 70 = \$4.20, \text{ Ans.}$
14. $15 \text{ ft.} \times 16 \times 3\frac{1}{2} \times 10 \div 10 = 700 \text{ board ft.};$
 $\$2.25 \times 700 \div 100 = \$15.75, \text{ Ans.}$
15. $26 \text{ ft.} \times 9 \times 6 \times 3 \div 12 = 351 \text{ board ft.};$
 $\$1.75 \times 351 \div 100 = \$6.14, \text{ Ans.}$
16. $14 \text{ ft.} \times 4 \times 3 \times 8 \div 12 = 112 \text{ board ft.};$
 $\$9.50 \times 112 \div 1000 = \$1.064, \text{ Ans.}$
17. $4 \text{ ft.} \times \overline{30 \text{ in.} - 2 \text{ in.}} \times 2 \div 12 = 18\frac{2}{3} \text{ board ft., sides;}$
 $\overline{42 \text{ in.} - 2 \text{ in.}} \times 28 \times 2 \div 12 = 15\frac{5}{6} \text{ board ft., ends;}$
 $4 \text{ ft.} \times 42 \times 2 \div 12 = 28 \text{ board ft., covers;}$
 $18\frac{2}{3} + 15\frac{5}{6} + 28 = 62\frac{2}{3} \text{ board ft., Ans.}$
18. $12 \text{ ft.} \times 11 \times 36 \div 12 = 396 \text{ board ft.};$
 $\$2.50 \times 396 \div 100 = \$9.90, \text{ Ans.}$
19. $14\frac{1}{2} \text{ ft.} \times 10 \times 3 \times 16 \div 12 = 580 \text{ board ft.};$
 $\$16.25 \times 580 \div 1000 = \$9.425, \text{ Ans.}$
20. $36 \text{ ft.} \times 10 \times \overline{21 \div 2} \div 12 = 315 \text{ board ft.};$
 $315 \text{ board ft.} \div 12 = 26\frac{1}{4} \text{ cu. ft., Ans.}$
21. $48 \text{ ft.} \times 38 \times 1\frac{1}{2} \times 2 = 5472 \text{ board ft.};$
 $\$35 \times 5472 \div 1000 = \$191.52, \text{ Ans.}$
22. $\overline{64 \text{ rd.} + 32 \text{ rd.}} \times 16\frac{1}{2} \times 2 \div 8 = 396 \text{ posts;}$
 $\overline{64 \text{ rd.} + 32 \text{ rd.}} \times 16\frac{1}{2} \times 2 \div 16 = 198 \text{ panels;}$
 $16 \text{ ft.} \times (12 + 6 + 9 + 9 + 9) \div 12 = 60 \text{ board ft. in a panel;}$
 $60 \text{ board ft.} \times 198 = 11880 \text{ board ft., lumber;}$
 $(\$25 \times 396 \div 100) + (\$14.80 \times 11880 \div 1000) = \$274.824,$

Ans.

Art. 229.

3. $6 \text{ ft.} \times 2\frac{1}{2} \times 3\frac{1}{3} \times 1728 \div 231 = 374\frac{2}{7} \text{ gal., Ans.}$
4. $43659 \text{ cu. in.} \div 231 \div 31\frac{1}{2} = 6 \text{ bbl., Ans.}$
5. $11 \text{ ft.} \times 6 \times 7 \times 1728 \div 63 = 54\frac{6}{7} \text{ hhd., Ans.}$
6. $6 \text{ ft.} \times 3 \times 1\frac{3}{4} \times 1000 \div 16 = 1968\frac{3}{4} \text{ lb., Ans.}$
7. $22.5 \text{ ft.} \times 3.25 \times 6.4 \times 1728 \div 231 = 3500\frac{68}{77} \text{ gal., Ans.}$
8. $35 \text{ ft.} \times 24 \times 3 \times 1728 \div 231 = 18850.9 \text{ gal.};$
 $18850.9 \div 63 \times .05 = 14.96; \$14.96, \text{ Ans.}$
9. $4 \text{ ft.} \times 3 \times 1\frac{2}{3} \times 1728 \div 231 = 149\frac{4}{7} \text{ gal.};$
 $149\frac{4}{7} \text{ gal.} \times 231 \div 1728 \times 1000 \div 16 = 1250 \text{ lb., Ans.}$
10. $52 \text{ bbl.} \times 31\frac{1}{2} \times 231 \div 1728 = 218\frac{3}{4} \text{ cu. ft., Ans.}$
11. $\overline{89.5 \times 268.5} - \overline{89.5 \times 231} = 3383.1 \text{ cu. ft., Ans.}$

Art. 230.

6. $10 \text{ ft.} \times 10 \times 4 \times .8 = 320 \text{ bu., Ans.}$
7. $256 \text{ bu.} \div .8 = 320 \text{ cu. ft., Ans.}$
8. $8 \text{ ft.} \times 6\frac{1}{2} \times 3\frac{1}{3} \times .8 = 138\frac{2}{3} \text{ bu., Ans.}$
9. $324 \text{ bu.} \div .8 \div \overline{6 \times 4\frac{1}{2}} = 15 \text{ ft., Ans.}$
10. $16 \times 4\frac{1}{2} \times 3\frac{1}{3} \times .8 = 192 \text{ bu., Ans.}$
11. $100.8 \text{ bu.} \div .8 \div \overline{7 \times 6} = 3 \text{ ft., Ans.}$
12. $8.5 \text{ ft.} \times 4.25 \times 3.75 \times .8 = 108\frac{3}{8} \text{ bu., Ans.}$
13. $12 \text{ ft.} \times 3 \times 2\frac{1}{2} \times .63 = 56.7 \text{ bu. apples};$
 $12 \text{ ft.} \times 3 \times 2\frac{1}{2} \times .8 = 72 \text{ bu. barley, Ans.}$
14. $\$2 \times (20 \text{ ft.} \times 12 \times 5 \times .8) = \$1920, \text{ Ans.}$
15. $\frac{3}{4} \text{ of } 7 \text{ ft.} \times 6 \times 5 \times .8 = 126 \text{ bu.};$
 $\$1.375 \times 126 = \$173.25, \text{ Ans.}$

16. $10 \text{ ft.} \times 6 \times 5 \times .8 \times 48 \div 100 = 115.2 \text{ cents;}$
 $\$1.78 \times 115.2 = \$205.056, \text{ Ans.}$
17. $15 \text{ ft.} \times 7\frac{1}{3} \times 8 \times .63 = 554.4 \text{ bu. ears;}$
 $\$.92 \times 554.4 \div 2 = \$255.024, \text{ Ans.}$
18. $10 \text{ ft.} \times 5 \times 4 \times .8 = 160 \text{ bu.} = 9600 \text{ lb.};$
 $9600 \div 60 \times 48 \div 196 = 39\frac{3}{4} \text{ bbl., Ans.}$
19. $40 \text{ ft.} \times 30 \times 20 \times 58\frac{1}{8} = 1395000 \text{ lb.};$
 $1395000 \text{ lb.} \div 2000 = 697\frac{1}{2} \text{ tons, Ans.}$
20. $231 \text{ cu. in.} \times 5000 \div 2150.42 = 537.1 \text{ bu., Ans.}$
21. $16 \text{ ft.} \times 6\frac{3}{4} \times 7 \times .63 = 476.28 \text{ bu. ears;}$
 $476.28 \text{ bu.} \div 2 = 238.14 \text{ bu. shelled corn, Ans.}$
22. $6 \text{ bu.} = 192 \text{ qt.};$
 $67.2 \text{ cu. in.} \times 192 \div 57.75 = 223.4 \text{ qt. liq. meas.};$
 $\$.20 \times 223.4 - \$.24 = \$20.68, \text{ Ans.}$
23. $17 \text{ ft.} \times 6 \times 3 \div 36 \text{ cu. ft.} = 8\frac{1}{2} \text{ tons, Ans.}$
24. $\$6.75 \times (6 \text{ ft.} \times 4 \times 5.75 \div 34.5 \text{ cu. ft.}) = \$27, \text{ Ans.}$
25. $10 \text{ yd.} \times 6 \times 6 \times 27 \div 36 \text{ cu. ft.} = 270 \text{ tons};$
 $\$5.50 \times 270 = \$1485, \text{ Ans.}$
26. $\$5.90 \times (7 \text{ ft.} \times 5 \times 5 \div 2 \div 35 \text{ cu. ft.}) = \$14.75, \text{ Ans.}$
27. $86 \text{ ft.} \times 24 \times 16 \div 400 = 82.56 \text{ tons, Ans.}$
28. $16 \text{ ft.} \times 8 \times 7 \div 500 = 1.792 \text{ tons, Ans.}$
29. $15 \text{ ft.} \times 15 \times 16 \div 27 \text{ cu. ft.} \times 10 = 13\frac{1}{3} \text{ tons};$
 $\$14.50 \times 13\frac{1}{3} = \$193.33\frac{1}{3}, \text{ Ans.}$
30. $60 \text{ ft.} \times 30 \times 18 \div 400 = 81 \text{ T.};$
 $81 \text{ T.} - \frac{1}{5} \text{ of } 81 \text{ T.} = 64\frac{4}{5} \text{ T.};$
 $\$12.75 \times 64.8 = \$826.20, \text{ Ans.}$

Art. 242.

2. $695 \text{ lb.} \times .35 = 243\frac{1}{4} \text{ lb., } Ans.$
3. $\$8428 \times .75 = \$6321, Ans.$
4. $318.8 \text{ rd.} \times .045 = 14.346 \text{ rd., } Ans.$
5. $\$5728 \times 1.05 = \$6014.40, Ans.$
6. $\$3140.75 + \$3140.75 \times .0125 = \$3180.01, Ans.$
7. $2.75 \text{ mi.} + 2.75 \text{ mi.} \times .075 = 2 \text{ mi. } 306 \text{ rd., } Ans.$
8. $400 \text{ ft.} + 400 \text{ ft.} \times .03\frac{1}{3} = 386\frac{2}{3} \text{ ft., } Ans.$
9. $8736 \text{ bu.} \times .33\frac{1}{3} = 2912 \text{ bu., } Ans.$
10. $\$35000 \times .005 = \$175, Ans.$
11. $\$171.24 \times 1.20 = \$205.49, Ans.$
12. $2\frac{5}{7} \text{ bu.} \times .84 = 21.6 \text{ bu., } Ans.$
13. $.875 \text{ ton} \times .25 = 437\frac{1}{2} \text{ lb., } Ans.$
14. $16400 \text{ men} \times .0075 = 123 \text{ men, } Ans.$
15. $2640 \text{ lb.} \times .038 = 100\frac{8}{25} \text{ lb., } Ans.$
16. $196 \text{ lb.} + 196 \text{ lb.} \times .35 = 264\frac{3}{5} \text{ lb., } Ans.$
17. $(\$4550 \times 3) - (\$4550 \times .20 + \$4550 \times .25 + \$4550 \times .375)$
 $= \$9896.25, Ans.$
18. $\$875.50 \times .05 = \$43.775, \text{ percentage;}$
 $\$875.50 - \$43.775 = \$831.725, Ans.$
19. $\$10720 \times .25 = \$2680; \$10720 - \$2680 = \$8040;$
 $\$8040 \times .125 = \$1005;$
 $\$10720 - (\$2680 + \$1005) = \$7035, Ans.$
20. $\$3540 \times .33\frac{1}{3} = \$1180; \$3540 \times .60 = \$2124;$
 $\$2124 - \$1180 = \$944, Ans.$

Art. 244.

2. $90 \div 450 = .20$ or 20% ; $180 \div 450 = .40$ or 40% , *Ans.*
3. $7 \text{ gal.} \div 56 \text{ gal.} = .125$ or $12\frac{1}{2}\%$, *Ans.*
4. $\$26.40 \div \$480 = .055$ or $5\frac{1}{2}\%$, *Ans.*
 $\$60 \div \$480 = .125$ or $12\frac{1}{2}\%$, *Ans.*
5. $120 \text{ A.} \div 192 \text{ A.} = .625$ or $62\frac{1}{2}\%$, *Ans.*
6. $10.99 \text{ mi.} \div 15 \text{ mi.} = .73\frac{4}{5}$ or $73\frac{4}{5}\%$, *Ans.*
7. $5.75 \text{ gal.} \div 46 \text{ gal.} = .125$ or $12\frac{1}{2}\%$, *Ans.*
8. $150 \text{ qt.} \div 200 \text{ qt.} = .75$ or 75% , *Ans.*
9. $\$.45 \div \$9 = .05$ or 5% , *Ans.*
10. $40 \text{ lb.} \div 250 \text{ lb.} = .16$ or 16% , *Ans.*
11. $448 \text{ da.} \div 5600 \text{ da.} = .08$ or 8% , *Ans.*
12. $90 \text{ oz.} \div 240 \text{ oz.} = .37\frac{1}{2}$ or $37\frac{1}{2}\%$, *Ans.*
13. $77.5 \text{ bu.} \div 500 \text{ bu.} = .155$ or $15\frac{1}{2}\%$, *Ans.*
14. $\$.50 \div \$100 = .005$ or $\frac{1}{2}\%$, *Ans.*
15. $4.5 \div 75 = .06$ or 6% ; $13.5 \div 225 = .06$ or 6% , *Ans.*
16. $.45 \div .6 = .75$ or 75% ; $3\frac{3}{8} \div 18\frac{1}{8} = .20$ or 20% , *Ans.*
17. $(600 \text{ men} - 320 \text{ men}) \div 600 = .46\frac{2}{3}$ or $46\frac{2}{3}\%$, *Ans.*
18. $(4000 \text{ A.} - 140 \text{ A.}) \div 4000 = .965$ or $96\frac{1}{2}\%$, *Ans.*
19. $\frac{1}{4}$ of $600 \text{ lb.} = 150 \text{ lb.}$; $\frac{1}{3}$ of $600 \text{ lb.} - 150 \text{ lb.} = 150 \text{ lb.}$;
 $600 \text{ lb.} - (150 \text{ lb.} + 150 \text{ lb.}) \div 600 = .5$ or 50% , *Ans.*
20. $\$9828 \div \$15120 = .65$ or 65% , *Ans.*
21. $\$52.50 \div \$750 = .07$ or 7% , *Ans.*
 $\$56.70 \div \$1260 = .045$ or $4\frac{1}{2}\%$, *Ans.*
22. $455 \text{ bu.} \div 2600 \text{ bu.} = .176$ or $17\frac{1}{2}\%$, *Ans.*

Art. 246.

2. 6.5 gal. $\div .05 = 130$ gal., *Ans.*
3. \$18.75 $\div .0625 = \$300$, *Ans.*
4. 420 bbl. $\div .125 = 3360$ bbl., *Ans.*
5. \$300 $\div .48 = \$625$, *Ans.*
6. 18 yd. $\div .36 = 50$ yd., *Ans.*
7. \$975 $\div .15 = \$6500$, *Ans.*
8. 78.5 $\div .25 = 314$, *Ans.*
9. 19.8 lb. $\div .075 = 264$ lb., *Ans.*
10. \$125.50 $\times .02 \div .08 = \$31.375$, *Ans.*
11. 400 ft. $\times .125 \div .025 = 2000$ ft., *Ans.*
12. \$825.60 $\div .33\frac{1}{3} = \$2476.80$, *Ans.*
13. \$243.72 $\div .09 = \$2708$, *Ans.*
14. \$1246.50 $\div (25\% \text{ of } 40\% \text{ or } 10\%) = \12465 , *Ans.*
15. 3150 bu. $\div (100\% - 30\% \text{ or } 70\%) = 4500$ bu., *Ans.*
16. \$5860 $\div (16\frac{2}{3}\% \text{ of } 45\% \text{ or } 7\frac{1}{2}\%) = \$78133.33\frac{1}{3}$, *Ans.*

Art. 248.

2. 2950 $\div 1.18 = 2500$, *Ans.*
3. \$6900 $\div 1.15 = \$6000$, *Ans.*
5. 350 $\div .70 = 500$, *Ans.*
6. 1640 $\div .955 = 1717.277$, *Ans.*
7. 345 $\div 1.15 = 300$, *Ans.*
8. 238 A. $\div 1.36 = 175$ A., *Ans.*
9. 84.6 cwt. $\div 2 = 42.3$ cwt., *Ans.*

10. $1272 \text{ bu.} \div 1.06 = 1200 \text{ bu.}, \text{ Ans.}$
11. $\$549 \div 1.22 = \$450, \text{ Ans.}$
12. $\$2590 \div .35 = \$7400, \text{ Ans.}$
13. $28.5 \text{ ft.} \div .50 = 57 \text{ ft.}, \text{ Ans.}$
14. $1035 \text{ mi.} \div .83\frac{1}{3} = 1242 \text{ mi.}, \text{ Ans.}$
15. $\$465.60 \div .96 = \$485, \text{ Ans.}$
16. $\$203.375 \div .625 = \$325.40, \text{ Ans.}$
17. $\$340 \div .85 = \$400, \text{ Ans.}$
18. $\$840 \div 1.40 = \$600, \text{ Ans.}$
19. $\$2232 \div .93 = \$2400, \text{ Ans.}$
20. $160 \text{ A.} \div .875 = 182\frac{2}{7} \text{ A.};$
 $182\frac{2}{7} \text{ A.} + 160 \text{ A.} = 342\frac{2}{7} \text{ A.}, \text{ Ans.}$

Art. 252.

1. $\$975 - \$975 \times .10 = \$877.50;$
 $\$877.50 - \$877.50 \times .05 = \$833.62\frac{1}{2}, \text{ Ans.}$
2. $\$750 - \$750 \times .20 = \$600;$
 $\$600 - \$600 \times .04 = \$576, \text{ net cost; } \left. \begin{array}{l} \\ \$750 - \$576 = \$174, \text{ disc't.} \end{array} \right\} \text{ Ans.}$
3. $\$1584.50 - \$1584.50 \times .125 = \$1386.437;$
 $\$1386.437 - \$1386.437 \times .025$
 $\qquad\qquad\qquad = \$1351.776, \text{ net cost; } \left. \begin{array}{l} \\ \$1584.50 - \$1351.776 = \$232.72, \text{ disc't.} \end{array} \right\} \text{ Ans.}$
4. $\$365.75 - \$365.75 \times .20 = \$292.60;$
 $\$292.60 - \$292.60 \times .10 = \$263.34;$
 $\$263.34 - \$263.34 \times .05 = \$250.17, \text{ net cost; } \left. \begin{array}{l} \\ \$365.75 - \$250.17 = \$115.58, \text{ disc't.} \end{array} \right\} \text{ Ans.}$

5. $\$260 - \$260 \times .10 = \$234$;
 $\$234 - \$234 \times .10 = \$210.60$;
 $\$210.60 - \$210.60 \times .03 = \$204.28$, net cost; } *Ans.*
 $\$260 - \$204.28 = \$55.72$, disc't.
6. $\$650 - \$650 \times .30 = \$455$;
 $\$650 - \$650 \times .25 = \$487.50$;
 $\$487.50 - \$487.50 \times .05 = \$463.125$;
 $\$463.125 - \$455 = \$8.125$, *Ans.*
7. $\$12.75 - \$12.75 \times .50 = \$6.375$;
 $\$6.375 - \$6.375 \times .10 = \$5.7375$;
 $\$5.7375 - \$5.7375 \times .05 = \$5.45$, *Ans.*
8. $\$1.00 - \$1.00 \times .40 = \$.60$;
 $\$1.00 - \$1.00 \times .15 = \$.85$; $\$.85 - \$.85 \times .10 = \$.765$;
 $\$.765 - \$.765 \times .10 = \$.6885$;
 $\$.6885 - \$.6885 \times .05 = \$.654$;
 $\$.654 - \$.60 = \$.054$, *Ans.*

Art. 256.

2. $\$3.50 \times .25 = \$.875$; $\$3.50 + \$.875 = \$4.37\frac{1}{2}$, *Ans.*
3. $\$3270 \times .07 = \228.90 ;
 $\$3270 + \$228.90 = \$3498.90$, *Ans.*
4. $\$623.75 \times .0625 = \38.98 ;
 $\$623.75 - \$38.98 = \$584.77$, *Ans.*
5. $\$1745 \times .20 = \349 ; $\$1745 + \$349 = \$2094$, *Ans.*
6. $\$3120 \times .27 = \842.40 ;
 $\$3120 + \$842.40 = \$3962.40$, *Ans.*
7. $\$2545.50 \times .25 = \636.375 ;
 $\$2545.50 - \$636.375 = \$1909.12\frac{1}{2}$, *Ans.*
8. $\$1.15 \times 500 \times .16\frac{2}{3} = \$95.83\frac{1}{3}$, gain, *Ans.*

9. $\$3.625 \times 76 \times .26 = \71.63 , gain;
 $(\$3.625 \times 76 + \$71.63) \div 76 = \$4.56\frac{3}{4}$, selling price, *Ans.*
10. $\$1.75 \times 40 \times .14\frac{2}{7} = \10 , loss, *Ans.*
11. $\$7650 \times .20 - \$480 = \$1050$, gain, *Ans.*
12. $\$.08\frac{1}{4} \times 230 \times 3 \times .18\frac{2}{11} = \10.35 , gain;
 $(\$.08\frac{1}{4} \times 230 \times 3 + \$10.35) \div 230 \times 3 = .0975$ or $9\frac{3}{4}\%$, *Ans.*
13. $\$126.50 \times 1.09 = \137.885 , *Ans.*
14. $\$3424 \times .875 = \2996 , *Ans.*
15. $\$1032.50 \times 1.14 = \1177.05 , *Ans.*
16. $\$3000 \times .91\frac{3}{4} = \2752.50 , *Ans.*
17. $\$3.50 \times 1.25 = \4.375 , *Ans.*
 $\$3.50 \times .80 = \2.80 , *Ans.*
18. $\$.625 \times .85 = \$.53\frac{1}{8}$, *Ans.*
 $\$1.25 \times .85 = \$1.06\frac{1}{4}$, *Ans.*
19. $(\$86.04 + \$4.78) \times .20 = \$18.164$, gain;
 $(\$90.82 + \$18.164) \div 956 = 11\frac{2}{5}\%$, price, *Ans.*
20. $23\frac{1}{3}$ yd. $\times 15 = 350$ yd. ;
 $(\$840 + \$840 \times .1875) \div 350 = \2.85 , *Ans.*

Art. 258.

1. $\frac{1}{4}$ of $\$640 \div \$640 = .25$ or 25% , *Ans.*
2. $\frac{2}{5}$ of $\$250 \div \$250 = .40$ or 40% , *Ans.*
3. $\$9.12 \div \$72.96 - \$9.12 = .14\frac{2}{7}$ or $14\frac{2}{7}\%$, *Ans.*
4. $\$4.93 - \$4.25 \div \$4.25 = .16$ or 16% , *Ans.*
5. $\$.095 - \$.08 \div \$.08 = .1875$ or $18\frac{3}{4}\%$, *Ans.*
6. $(\$42 \times 150 - \$5400) \div \$6300 = .14\frac{2}{7}$ or $14\frac{2}{7}\%$, *Ans.*

8. $\$114.885 \div \$4.625 \times 108 = .23$ or 23% , *Ans.*
 9. $\overline{.75 - .50} \div .50 = .5$ or 50% , *Ans.*
 10. $\overline{.8 - .5} \div .8 = .375$ or $37\frac{1}{2}\%$, *Ans.*

Art. 260.

2. $\$1500 \div .16 = \9375 , *Ans.*
 3. $\$.88 \div .10 = \8.80 , *Ans.*
 4. $\$.06 \div .4 = \1.50 , *Ans.*
 5. $\$4.95 \div .35 = \14.14 , *Ans.*
 7. $\$69.75 \div 1.24 = \56.25 ;
 $\$56.25 \div 25 = \2.25 , cost, *Ans.*
 8. $\$8.25 \times 9.2 \div .88 = \86.25 , *Ans.*
 9. $\$6 \div \overline{1 - 12\frac{1}{2}}$ or $.87\frac{1}{2} = \$6.857$, *Ans.*
 10. $\$.96 \div 1.28 = \$.75$, *Ans.*
 11. $\$5.40 \div 1.10 = \4.91 , *Ans.*

Art. 261.

2. $\$120 \times 1.20 \div .96 = \150 , marking price, *Ans.*
 3. $\$60 \times 1.20 \div .75 = \96 , marking price, *Ans.*
 4. $\$20000 \times 1.10 \div .80 = \27500 , marking price, *Ans.*

Art. 265.

2. $\$4650 \times .025 = \116.25 , *Ans.*
 3. $\$6.25 \times 375 \times .0325 = \76.17 , *Ans.*
 4. $\$13750 \times .0275 = \378.125 , *Ans.*
 5. $\$9384 \times .00875 = \82.11 , *Ans.*

$$6. \$21680 \times .0175 = \$379.40, \text{ Ans.}$$

$$7. \$14625 \times 520 \times 250 \times .015 = \$285.19, \text{ Ans.}$$

$$8. (\$3.25 \times 225 + \$4.50 \times 316) \times .045 = \$96.90, \text{ Ans.}$$

Art. 266.

$$2. \$78 \div \$5200 = .015 \text{ or } 1\frac{1}{2}\%, \text{ Ans.}$$

$$3. \$189 \times \$7560 = .025 \text{ or } 2\frac{1}{2}\%, \text{ Ans.}$$

$$4. \$63 \div \$1260 = .05 \text{ or } 5\%, \text{ Ans.}$$

$$5. \$74.25 \div \overline{\$.045 \times 26400} = .0625 \text{ or } 6\frac{1}{4}\%, \text{ Ans.}$$

Art. 267.

$$2. \$378 \div .0225 = \$16800, \text{ Ans.}$$

$$3. \$210 \div .06 = \$3500, \text{ Ans.}$$

$$4. \$59.50 \div .0175 = \$3400, \text{ Ans.}$$

$$5. \$394 \div .025 = \$15760, \text{ Ans.}$$

Art. 268.

$$2. \$4455 \div 1.0125 = \$4400, \text{ Ans.}$$

$$3. \$6617.70 \div 1.02125 = \$6480, \text{ Ans.}$$

$$4. \$9909.30 \div 1.005 = \$9860, \text{ Ans.}$$

$$5. \$1508.80 \div 1.025 \div \$5.75 = 256 \text{ bbl., Ans.}$$

Art. 271.

$$2. \$9700 \times .0075 = \$72.75, \text{ Ans.}$$

$$3. \$3840 \times .00875 = \$33.60, \text{ Ans.}$$

$$4. \frac{2}{3} \text{ of } (\$1.20 \times 5000) = \$4000 ;$$

$$\$4000 \times .0225 = \$90, \text{ Ans.}$$

$$5. (\$8000 + \$4000) \times .02375 = \$285, \text{ Ans.}$$

Art. 272.

2. $\$172.20 \div \$9840 = .0175$ or $1\frac{3}{4}\%$, *Ans.*
 3. $\$38.25 \div \$6120 = .00625$ or $\frac{5}{8}\%$, *Ans.*
 4. $\$46.75 \div \frac{1}{2}$ of $\$6800 = .01375$ or $1\frac{3}{8}\%$, *Ans.*

Art. 273.

2. $\$93.50 \div .01375 \times 2 = \13600 , *Ans.*
 3. $\$245 \div .04375 \times \frac{8}{9} = \8960 , *Ans.*
 4. $\$1500 \div .025 = \60000 , *Ans.*
 5. $\$526.50 \div .045 \times \frac{4}{3} = \15600 , *Ans.*
 6. $\$73.50 \div .004 \times \frac{4}{3} = \24500 , *Ans.*

Art. 277.

2. $\$7743.75 \div \$1475000 = .00525$ or $5\frac{1}{4}$ mills, *Ans.*
 4. $\$8530 \times .0125 + \$2.25 = \$108.87\frac{1}{2}$, *Ans.*
 5. $\$987 \times .0125 + \$.75 = \$13.0875$, *Ans.*
 7. $\$11123 \div .98 = \11350 , *Ans.*

Art. 284.

2. $500 \text{ lb.} \times 50 - 56 \text{ lb.} \times 50 = 22200 \text{ lb., net weight;}$
 $\$.0175 \times 22200 = \388.50 , duty, *Ans.*
 3. $31\frac{1}{2} \text{ gal.} \times 50 = 1575 \text{ gal. ;}$
 $1575 \text{ gal.} - 1575 \times .02 = 1543\frac{1}{2} \text{ gal. ;}$
 $\$.10 \times 1543\frac{1}{2} = \154.35 , duty, *Ans.*
 4. $100 \text{ lb.} \times 72 - 7200 \times .055 = 6804 \text{ lb., net weight;}$
 $\$.025 \times 6804 = \170.10 , duty, *Ans.*

5. $12 \text{ doz.} \times 120 = 1440 \text{ doz.};$
 $1440 \text{ doz.} - 1440 \text{ doz.} \times .025 = 1404 \text{ doz., net};$
 $\$.60 \times 1404 = \$842.40, \text{ duty, Ans.}$
6. $\$125 \times 25 \times .35 = \$1093.75;$
 $\$37.50 \times 15 \times .25 = \$140.625;$
 $\$1093.75 + \$140.625 = \$1234.375, \text{ Ans.}$
7. $65 \text{ lb.} \times 175 = 11375 \text{ lb.};$
 $\$.46 \times 11375 \times .28 = \$1465.10, \text{ Ans.}$
8. $\$625 - \$625 \times .12 \times .24 = \$132, \text{ Ans.}$
9. $350 \times 100 \div 1000 \times 12 = 420 \text{ lb.};$
 $\$2.50 \times 420 + (\$7.50 \times 350 \times .25) = \$1706.25, \text{ Ans.}$

Art. 285.

1. $\$1.40 \times 450 - \$1.25 \times 450 = \$67.50, \text{ profit};$
 $\$67.50 \div \$1.25 \times 450 = .12 \text{ or } 12\%, \text{ Ans.}$
2. $\$5250 - \$5250 \times .0575 = \$4948.12\frac{1}{2}, \text{ net proceeds, Ans.}$
3. $\$3.60 \div 1.125 = \$3.20, \text{ cost};$
 $\$3.20 + \$3.20 \times .20 = \$3.84, \text{ Ans.}$
4. $\$750 - \$750 \times .40 = \$450;$
 $\$750 - \$750 \times .30 = \$525;$
 $\$525 - \$525 \times .10 = \$472.50;-$
 $\$472.50 - \$450 = \$22.50, \text{ Ans.}$
5. $\$1.20 \times 4000 = \$4800; \frac{3}{4} \text{ of } 1\frac{1}{2}\% = 1\frac{1}{8}\%;$
 $\frac{3}{8} \text{ of } \$4800 \times .01\frac{1}{8} = \$36.00, \text{ insurance};$
 $\$4800 + \$36 - \frac{2}{8} \text{ of } \$4800 = \$1636, \text{ Ans.}$
6. $\$1 + \$1 \times .50 = \$1.50; \$1.50 - \$1.50 \times .50 = \$.75;$
 $\$1 - \$.75 \div \$1 = .25 \text{ or } 25\%, \text{ Ans.}$
7. $\$1.80 \div .90 = \$2; \$2 \div .80 = \$2.50, \text{ retail};$
 $(\$2.50 - \$1.80) \div \$2.50 = .28 \text{ or } 28\%, \text{ Ans.}$

8. $\$198 \div .90 = \220 , asking price ;
 $\$220 \div 1.10 = \200 , cost, *Ans.*
9. $\$125 \times 24 = \3000 ;
 $(\$1500 \div 5 \times 4) + (\$1500 \div 3 \times 4) = \3200 , the cost ;
 $\$3200 - \$3000 = \$200$, loss, *Ans.*
10. $\$30 \times 1.20 = \36 , selling price ;
 $\$36 \div .75 = \48 , marking price, *Ans.*
11. $\$9120 \div .95 = \9600 , to be raised ;
 $\$9600 \div \$1536000 = .00625$ or $\frac{5}{8}\%$, *Ans.*
12. $\$.80 \div .75 = \$1.06\frac{2}{3}$, *Ans.*
13. $\$960 \div .80 = \120 ; $\$120 + \$120 \times .15 = \$138$, *Ans.*
14. $\$107.25 \div .0325 = \3300 , cost of whole ;
 $\$3300 \div \overline{500 \times .80} = \8.25 , *Ans.*
15. If $\frac{5}{8}$ sells for the cost of the whole, the whole will sell for
 $\frac{8}{5}$ the cost ; $\frac{8}{5} - \frac{5}{5} = \frac{3}{5} = .60$ or 60% , *Ans.*
16. $36840 \times \$21.12 \div 1000 = \778.0608 ;
 $\$778.0608 \div 1.28 = \607.86 , cost ;
 $\$17 \times 36840 = \626.28 ;
 $\$626.28 - \$607.86 = \$18.42$, gain, *Ans.*
17. $\$96 \times 106.9375 = \10266 ;
 $\$10266 \div 1.18 = \8700 , cost, *Ans.*
18. $\$.15 \times 115 \times 175 \times .15 = \$452.81\frac{1}{4}$, duty, *Ans.*
19. $\$1 - \overline{\$1.20 \times .20} = \$.96$, selling price ;
 $\$1 - \overline{\$.96 \div \$1} = .04$ or 4% , loss, *Ans.*
20. $\$12000 \div (1 \times 1.5 \times 1.5 \times 1.5 \times 1.5) = \2370.3707 , *Ans.*
21. $\$6000 \times .01\frac{1}{4} = \75 , premium ;
 $\$10000 - \$75 + \$5.50 = \4080.50 , loss, *Ans.*
22. $\$.025 \div .08 = \$.3125$, cost, *Ans.*

23. 30% of $\frac{2}{3} = .18$ of the whole ;
 5% of $\frac{2}{3} = .02$ of the whole ;
 $\$720 \div .18 - .02 = \4500 , investment ;
 30% of $\frac{2}{3} = .12$ of the whole ;
 5% of $\frac{2}{3} = .03$ of the whole ;
 $\$4500 \times .12 - .03 = \405 , *Ans.*

Art. 294.

3. $\$137.25 \times .06 \times 18\frac{1}{3} \div 12 = \12.58 , *Ans.*
 $\$137.25 \times .04 \times 18\frac{1}{3} \div 12 = \8.39 , *Ans.*
4. $\$510.50 \times .05 \times 43\frac{1}{2} \div 12 = \92.53 , *Ans.*
 $\$510.50 \times .08 \times 43\frac{1}{2} \div 12 = \148.04 , *Ans.*
5. $\$1297.60 \times .07 \times 35.6 \div 12 = \269.47 , *Ans.*
 $\$1297.60 \times .075 \times 35.6 \div 12 = \288.72 , *Ans.*
6. $\$36.40 \times .06 \times 19 \div 12 = \3.46 , *Ans.*
 $\$36.40 \times .07 \times 19 \div 12 = \4.03 , *Ans.*
 $\$36.40 \times .075 \times 19 \div 12 = \4.32 , *Ans.*
7. $\$750.50 \times .05 \times 37 \div 12 = \115.70 , *Ans.*
 $\$750.50 \times .08 \times 37 \div 12 = \185.12 , *Ans.*
 $\$750.50 \times .09 \times 37 \div 12 = \208.26 , *Ans.*
8. $\$408.60 \times .10 \times 3.9\frac{1}{3} \div 12 + \$408.60 = \$421.99$, *Ans.*
9. $\$515.62 \times .07 \times 28\frac{1}{2} \div 12 = \85.72 , *Ans.*
10. $\$65.75 \times .06\frac{1}{2} \times 3\frac{1}{6} + \$65.75 = \$79.28$, *Ans.*

11. $\$375 \times .05 \times 2\frac{1}{2} + \$375 = \$421.87\frac{1}{2}$, *Ans.*
12. $\$12500 - (\$4000 + \$3500 + \$2600) = \$2400$;
 $\$3500 \times .06 \times .75 + \$3500 = \$3657.50$;
 $\$2600 \times .06 \times 1\frac{1}{2} + \$2600 = \$2834$;
 $\$2400 \times .06 \times 2\frac{1}{3} + \$2400 = \$2736$;
 $\$4000 + \$3657.50 + \$2834 + \$2736 = \$13227.50$, *Ans.*

Art. 296.

2. $\$267.27 \times .034 = \9.09 , *Ans.*
3. $\$146.18 \times .063\frac{1}{2} = \9.28 , *Ans.*
4. $\$256.84 \times .142 = \36.47 , *Ans.*
5. $\$597.25 \times .038 = \22.70 , *Ans.*
6. $\$418.75 \times .009\frac{1}{6} = \3.84 , *Ans.*
7. $\$309.18 \times .124 = \38.34 , *Ans.*
8. $\$38.90 \times .066 = \2.57 , *Ans.*
9. $\$146.48 \times .046\frac{2}{3} = \$6.83\frac{1}{2}$, *Ans.*
10. $\$275.50 \times .059\frac{1}{2} = \16.39 , *Ans.*
11. $\$1298 \times .187\frac{1}{6} = \242.94 , *Ans.*
12. $\$2000 \times .159 = \318 , *Ans.*
13. $\$4010 \times .067\frac{1}{6} = \269.34 , *Ans.*
14. $\$450 \times .010\frac{1}{2} = \4.725 , *Ans.*
 $\$450 \times .005\frac{1}{3} = \2.475 , *Ans.*
 $\$450 \times .015\frac{1}{2} = \6.975 , *Ans.*
 $\$450 \times .02 = \9 , *Ans.*
 $\$450 \times .007\frac{5}{6} = \3.525 , *Ans.*
15. From Nov. 11, 1881, to Dec. 15, 1883
 $= 2 \text{ yr. } 1 \text{ mo. } 4 \text{ da.}$
 $\$35.61 \times .125\frac{2}{3} = \4.47 , *Ans.*

16. From Sept. 4, 1880, to Jan. 1, 1882 = 1 yr. 3 mo. 27 da.;
 $\$50 \times .035 \times 15.9 \div 12 = \2.317 , *Ans.*
17. From May 17, 1876, to Dec. 20, 1883
 = 7 yr. 7 mo. 3 da.;
 $\$97.86 \times .07 \times 91.1 \div 12 = \52 , *Ans.*
18. From June 20, 1882, to Sept. 4, 1884
 = 2 yr. 2 mo. 14 da.;
 $\$325.26 \times .08 \times 24.4\frac{2}{3} \div 12 = \57.39 , *Ans.*
19. From April 10, 1883, to Nov. 24, 1883 = 7 mo. 14 da.;
 $\$154.75 \times .037\frac{1}{3} = \5.777 , *Ans.*
20. From June 3, 1881, to Mar. 25, 1882 = 9 mo. 22 da.;
 $\$861.50 \times .05 \times 9.7\frac{1}{3} \div 12 = \34.938 , *Ans.*
21. From Mar. 6, 1883, to Dec. 20, 1883 = 9 mo. 14 da.;
 $\$450.80 \times .047\frac{1}{3} + \$450.80 = \$472.137$, *Ans.*
22. From May 5, 1884, to Jan. 20, 1885 = 8 mo. 15 da.;
 $\$1500 \times .04 \times 8\frac{1}{2} \div 12 + \$1500 = \$1542.50$, *Ans.*
23. From Dec. 12, 1879, to July 3, 1881
 = 1 yr. 6 mo. 21 da.;
 $\$127.36 \times .045 \times 18.7 \div 12 + \$127.36 = \$136.29$, *Ans.*

Art. 298.

		(4.)		
	\$76.50	\$12.75		
	.05			
12	26 ¹³			
		\$8.287, <i>Ans.</i>		

		(5.)		
	\$1276.25			
	.07			
12	11			
12	982.71			
		\$81.89, <i>Ans.</i>		

(6.)

	\$1500	\$125
2	15	
12	6.8	3.4
<hr/>		
	\$63.75, Ans.	

(7.)

	\$2162.94	
	.10	.05
12	12.6	2.1
<hr/>		
	\$227.108, Ans.	

(8.)

	\$2500	
	.08	.02
3	93	31
<hr/>		
3	155	
<hr/>		
	\$51.66 $\frac{2}{3}$, Ans	

(9.)

	\$2000	\$100
	.06	
360	33	11
<hr/>		
	\$11, Ans.	

(10.)

	\$54.75	\$18.25
	.05	
12	36.8	9.2
<hr/>		
	\$8.395, Ans.	

(11.)

	\$51.10	
	.04	
3	12	10.1
<hr/>		
3	\$5.16110	
<hr/>		
	\$1.72, Ans.	

(12.)

	\$460.50	\$76.75
12	.09	
30	60	
<hr/>		
	\$6.907, Ans.	

(13.)

	\$650		
	.24	.02	
6	360	12	25
<hr/>			
6	325		
<hr/>			
	\$54.16 $\frac{2}{3}$, Ans.		

(14.)

	\$84.25	
4	25	
3	52	13
12	<hr/>	
36	273.81	
<hr/>		
	\$7.605	
	<hr/>	
	84.25	
	<hr/>	
	\$91.855, Ans.	

(15.)

	\$500	
12	.12	
30	93 ³¹	
<hr/>		
	\$15.50	
	500	
<hr/>		
	\$515.50, Ans.	

(16.)

	\$2500	\$625
³ 12	.05	
3	23	
<hr/>		
9	718.75	
<hr/>		
	\$79.86	
	2500	
<hr/>		
	\$2579.86, Ans.	

(17.)

	\$1500	\$25
	.06	
⁵ 360	76	
<hr/>		
	\$19	
	1500	
<hr/>		
	\$1519, Ans.	

(18.)

	\$370.80	\$12.36
12	.06	
30	666 ³³³	
<hr/>		
	\$41.158	
	370.80	
<hr/>		
	\$411.958, Ans.	

(19.)

	\$1200	\$50
2	9	
12	12.3	
<hr/>		
	\$55.35	
	1200	
<hr/>		
	\$1255.35, Ans.	

(20.)

	\$960	
	.07	
12	10.8 ⁹	
<hr/>		
	\$60.48	
	960	
<hr/>		
	\$1020.48, Ans.	

(21.)

	\$860	
12	.15 ⁰⁵	
30	84 ⁷	
<hr/>		
	\$30.10	
	860	
<hr/>		
	\$890.10, Ans.	

(22.)

	\$1280	\$320
12	.09	
3	22	
<hr/>		
	\$70.40	
	1280	
<hr/>		
	\$1350.40	

(23.)

$$\begin{array}{r|l}
 \$9700 & \\
 .06 & \\
 12 & \$1^{\frac{1}{2}} \\
 \hline
 & \$873
 \end{array}$$

$$\begin{array}{r|l}
 \$9700 & \\
 .10^{.05} & \\
 12 & \$1^3 \\
 \hline
 & \$1455
 \end{array}$$

$$\$1455 - \$873 = \$582, \text{ gain, } Ans.$$

24. 21 yr. — 15 yr. 3 mo. 20 da. = 5 yr. 8 mo. 10 da.;

$$\$3754.45 \times .341\frac{2}{3} + \$3754.45 = \$5037.22, \text{ } Ans.$$

25. Time from Jan. 1, 1884, to Aug. 12, 1886, less 3 mo., is
2 yr. 4 mo. 11 da., or $28.3\frac{2}{3}$ mo.;

$$\$710.50 \times .07 \times 28.3\frac{2}{3} + \$710.50 = \$828.07, \text{ } Ans.$$

26. $\$9675 \div \$6.25 = 1548$, No. bbl. purchased;

$$\$7.375 \times 1548 = \$11416.50, \text{ sold for cash;}$$

$$\$9675 \times .064\frac{1}{6} + \$9675 = \$10295.81, \text{ cost of flour, with interest for 1 yr. 25 da. ;}$$

$$\$11416.50 - \$10295.81 = \$1120.69, \text{ } Ans.$$

27. $\$21840 \times .12\frac{1}{2} = \2730 ;

$$\$21840 \times .09 = \$1965.60$$

$$\$2730 - \$1965.60 = \$764.40, \text{ loss in 1 yr. ;}$$

$$\$764.40 \times 2\frac{1}{4} \text{ yr.} = \$1868.53,$$

loss in 2 yr. 5 mo. 10 da., *Ans.*

28. $\$1.125 \times 4500 = \5062.50 , cost of wheat;

$$\$1.06 \times 4500 = \$4770, \text{ sold for cash ;}$$

$$\$4770 \times .10 \div 2 = \$238.50, \text{ int. for 6 mo. ;}$$

$$\$5062.50 - \$4770 + \$238.50 = \$54, \text{ loss, } Ans.$$

Art. 300.

(2.)		(3.)	
	\$560 ^{\$112}		\$315
12	.06		.04
30	72	2	7
	\$6.72, int.		\$44.10, int.
	\$6.72		\$44.10 ^{\$22.05}
.06		.04	
72	360 ⁵	7	2
.06	33.60	.07	\$22.05
	\$560, prin		\$315, prin.
^{\$112}	\$560	\$315	\$44.10 ^{\$6.23}
.06	12	7	2
72	30	\$315	\$12.60
\$112	\$6.72		.04, rate.
	.06, rate.		
\$560	\$6.72 ^{\$112}	\$315	\$44.10 ^{\$22.05}
.06		.02	.04
560	112	\$6.30	\$22.05
	.2 yr.		3.5 yr.
	= 2 mo. 12 da., time.		= 3 yr. 6 mo., time.

4. $\$173.97 \div .06 \times 4\frac{1}{3} = \$669.115, \text{ Ans.}$

$\$173.97 \div .12 \times 4\frac{1}{3} = \$334.557, \text{ Ans.}$

5. $\$153.75 \div (.07 \times 3.8 \div 12) = \$6936.09, \text{ Ans.}$

$\$153.75 \div (.08 \times 3.8 \div 12) = \$6069.08, \text{ Ans.}$

6. $\$1596 \div (1 + .055 \times 2.5) = \1403.08 , *Ans.*
7. $\$1531.50 \div (1 + .07 \times 3.6 \div 12) = \1500 , *Ans.*
8. $\$70 \div \$350 \times 2.5 = .08$ or 8% , *Ans.*
9. $\$220 \div \$550 \times 5\frac{1}{3} = .075$ or $7\frac{1}{2}\%$, *Ans.*
10. $\$68.11 \div (\$2085 \times 5.6 \div 12) = .07$ or 7% , *Ans.*
11. $\$2.94 \div (\$245 \times .06) = .2$ yr. = 2 mo. 12 da., *Ans.*
12. $\$132 \div (\$600 \times .08) = 2.75$ yr. = 2 yr. 9 mo., *Ans.*
13. $\$576.95 - \$550 \div \$550 \times .07 = .7$ yr. = 8 mo. 12 da., *Ans.*
14. $\$217.09 - \$204 \div \$204 \times .055 = 1.16\frac{2}{3}$ yr.
= 1 yr. 2 mo., *Ans.*
15. $\$400 \div \$1600 \times .08 = 3.125$ yr. = 3 yr. 1 mo. 15 da., *Ans.*
16. $\$1560 \div .08 \times 1 = \19500 , *Ans.*
17. $\$1014 \div \$15600 \times 1 = .065$ or $6\frac{1}{2}\%$, *Ans.*
18. $\$3370 \div .10 \times 1 = \33700 , *Ans.*
19. $\$2000 \div (1 + .07 \times 4.5) = \1520.9125 , *Ans.*
20. $\$2000 \div \$1600 \div \$1600 \times .06 = 4.16\frac{2}{3}$ yr.
= 4 yr. 2 mo., *Ans.*
21. $\$223 \times 12 \div \$35680 \times 1 = .075$ or $7\frac{1}{2}\%$, *Ans.*
25. $\$780 \div \$9750 \times .24 = .33\frac{1}{3}$ yr. = 4 mo., *Ans.*
26. $\$843.75 - \$750 \div \$750 \times 1.25 = .10$ or 10% , *Ans.*
27. $\$206.25 \times 4 \div \$15000 \times 1 = .055$ or $5\frac{1}{2}\%$, *Ans.*
28. $\$1000 \div .04 \times 1 = \25000 , *Ans.*

Art. 302.

2. $\$312 \times 1.06 = \330.72 ; $\$330.72 \times 1.06 = \350.5632 ;
 $\$350.5632 \times 1.06 = \371.5969 , amt.;
 $\$371.5969 - \$312 = \$59.5969$, comp. int., *Ans.*
 $\$800 \times 1.04 = \832 ; $\$832 \times 1.04 = \865.28 ;
 $\$865.28 \times 1.04 = \899.8915 ;
 $\$899.8915 \times 1.04 = \935.8871 , amt.;
 $\$935.8871 - \$800 = \$135.8871$, comp. int., *Ans.*
3. $\$640 \times 1.05 = \672 ; $\$672 \times 1.05 = \705.60 ;
 $\$705.60 \times 1.05 = \740.88 ;
 $\$740.88 \times 1.05 = \777.924 , amt.;
 $\$777.924 - \$640 = \$137.924$, comp. int., *Ans.*
 $\$376 \times 1.06 = \398.56 ; $\$398.56 \times 1.06 = \422.4736 ;
 $\$422.4736 \times 1.06 = \447.822 ;
 $\$447.828 \times 1.04\frac{1}{4} = \466.86 , amt.;
 $\$466.86 - \$376 = \$90.86$, comp. int., *Ans.*
4. $\$1200 \times 1.04\frac{1}{2} = \1254 ; $\$1254 \times 1.04\frac{1}{2} = \1310.43 ;
 $\$1310.43 \times 1.015 = \1330.08645 , amt.;
 $\$1330.08645 - \$1200 = \$130.08645$, comp. int., *Ans.*
 $\$1200 \times 1.07 = \1284 ; $\$1284 \times 1.07 = \1373.88 ;
 $\$1373.88 \times 1.07 = \1470.0516 ;
 $\$1470.0516 \times 1.04\frac{2}{3} = \1538.654 , amt.;
 $\$1538.654 - \$1200 = \$338.654$, comp. int., *Ans.*
5. $\$400 \times 1.03\frac{1}{2} = \414 ; $\$414 \times 1.03\frac{1}{2} = \428.49 ;
 $\$428.49 \times 1.03\frac{1}{2} = \443.4871 , amt.;
 $\$443.4871 - \$400 = \$43.487$, comp. int., *Ans.*
6. $\$2000 \times 1.02 = \2040 ; $\$2040 \times 1.02 = \2080.80 ;
 $\$2080.80 \times 1.02 = \2122.416 ;

$$\$2122.416 \times 1.02 = \$2164.864, \text{ amt.};$$

$$\$2164.864 - \$2000 = \$164.864, \text{ comp. int., } \textit{Ans.}$$

$$7. \$2500 \times 1.01\frac{1}{2} = \$2537.50;$$

$$\$2537.50 \times 1.01\frac{1}{2} = \$2575.5625;$$

$$\$2575.5625 \times 1.01\frac{1}{2} = \$2614.1959;$$

$$\$2614.1959 \times 1.01\frac{1}{2} = \$2653.4088, \text{ amt.};$$

$$\$2653.4088 - \$2500 = \$153.4088, \text{ comp. int., } \textit{Ans.}$$

Art. 310.

$$2. \$614.40 \div 1.024 = \$600, \text{ present worth};$$

$$\$614.40 - \$600 = \$14.40, \text{ true discount, } \textit{Ans.}$$

$$3. \$2640 \div 1.056 = \$2500, \text{ present worth};$$

$$\$2640 - \$2500 = \$140, \text{ true discount, } \textit{Ans.}$$

$$4. \$475 \div \$1.03 = \$461.165, \text{ present worth};$$

$$\$475 - \$461.165 = \$13.835, \text{ true discount, } \textit{Ans.}$$

$$5. \$4200 \times .03 = \$126, \text{ discount for cash};$$

$$\$4200 - \overline{\$4200 \div 1.02} = \$82.353, \text{ true discount};$$

$$\$126 - \$82.353 = \$43.65, \text{ in favor of cash discount, } \textit{Ans.}$$

$$6. \$1250 \div 1.05 = \$1190.476, \text{ present worth};$$

$$\$1195 - \$1190.476 = \$4.52, \text{ loss, } \textit{Ans.}$$

$$7. \$475 \div 1.05 = \$452.38, \text{ present worth};$$

$$\overline{\$1005} - \$475 \div 1.075 = \$493.023, \text{ present worth};$$

$$\$452.38 + \$493.023 = \$945.40, \text{ present worth of debt,}$$

Ans.

$$8. \$130 \times .10 \times \frac{5}{6} = \$10.833, \text{ int.};$$

$$\$130 - \overline{\$130 \div 1.08\frac{1}{3}} = \$10, \text{ true discount};$$

$$\$10.833 - \$10 = \$.83\frac{1}{3}, \text{ diff., } \textit{Ans.}$$

9. $\$3750 \times .15 = \562.50 , cash ;
 $\$3750 \times .25 \div 1.015 = \923.645 , present worth of 25% ;
 $\$3750 \times .20 \div 1.02 = \735.294 , present worth of 20% ;
 $\$3750 - \$2250 \div 1.03$
 $= \$1456.31$, present worth of remainder ;
 $\$562.50 + \$923.645 + \$735.294 + \1456.31
 $= \$3677.75$, present worth, *Ans.*

Art. 318.

2. $\$368 \times .07 \times 3.1 \div 12 = \6.65 , discount ;
 $\$368 - \$6.65 = \$361.35$, proceeds, *Ans.*
3. $\$597.50 \times .0105 = \6.27 , discount ;
 $\$597.50 - \$6.27 = \$591.23$, proceeds, *Ans.*
4. $\$684.60 \times .05 \times 4.1 \div 12 = \11.695 , discount ;
 $\$684.60 - \$11.695 = \$672.905$, proceeds, *Ans.*
5. $\$1080 \times .08 \times 2.7 \div 12 = \19.44 , discount ;
 $\$1080 - \$19.44 = \$1060.56$, proceeds, *Ans.*
6. $\$875 \times .06 \times 3.4\frac{1}{3} \div 12 = \15.02 , discount ;
 $\$875 - \$15.02 = \$859.98$, proceeds, *Ans.*
7. $\$1250 \times .05 \times 2.6 \div 12 = \13.54 , discount ;
 $\$1250 - \$13.54 = \$1236.46$, proceeds, *Ans.*
8. $\$480 \times .10 \times 4.5 \div 12 = \18 , discount, *Ans.*
 $\$480 - \$18 = \$462$, proceeds, *Ans.*
9. $\$940 \times .07 \times 4 \div 12 = \21.93 , discount ;
 $\$940 - \$21.93 = \$918.07$, proceeds, *Ans.*
10. $\$672.50 \times .06 \times 6.1 \div 12 = \20.51 , discount, *Ans.*
11. $\$1500 - (\$1500 \times .07 \times 3.1 \div 12)$
 $= \$1472.875$, proceeds, *Ans.*

12. $\$480 \times .08 \times 10 \div 12 = \32 , discount;
 $\$480 - \$32 = \$448$, proceeds, *Ans.*
13. $\$1500 \times .06 \times 2.1 \div 12 = \15.75 , bank discount;
 $\$1500 - \$1500 \div 1.01 = \$14.85$, true discount;
 $\$15.75 - \$14.85 = \$.90$, diff., *Ans.*
14. Due Aug. $\frac{1}{4}$; term of discount, 81 da.;
 $\$560 \times .06 \times 2.7 \div 12 = \7.56 , discount;
 $\$560 - \$7.56 = \$552.44$, proceeds, *Ans.*
15. Due Dec. $\frac{4}{7}$; term of discount, 57 da.;
 $\$900 \times .06 \times 57 \div 360 = \8.55 , discount;
 $\$900 - \$8.55 = \$891.45$, proceeds, *Ans.*
16. Due May $\frac{1}{4}$; term of discount, 61 da.;
 $\$680 \times .08 \times 61 \div 360 = \9.217 , discount;
 $\$680 - \$9.217 = \$670.78$, proceeds, *Ans.*
17. Due July $1\frac{9}{22}$; term of discount, 41 da.;
 $\$1250 \times .07 \times 41 \div 360 = \9.965 , discount;
 $\$1250 - \$9.965 = \$1240.035$, proceeds, *Ans.*
18. Due July $1\frac{2}{15}$; term of discount, 21 da.;
 $\$1500 \times .10 \times 21 \div 360 = \8.75 , discount;
 $\$1500 - \$8.75 = \$1491.25$, proceeds, *Ans.*
19. Due Jan. $1\frac{6}{19}$; term of discount, 66 da.;
 $\$375.60 \times .05 \times 66 \div 360 = \3.443 , discount;
 $\$375.60 - \$3.443 = \$372.157$, proceeds, *Ans.*
20. $\$1615 + (\$1615 \times .07 \times 93 \div 360) = \1644.204 , amt.;
 $\$1644.204 \times .07 \times 93 \div 360 = \29.732 , discount;
 $\$1644.204 - \$29.732 = \$1614.472$, proceeds, *Ans.*
21. Due Dec. $1\frac{2}{15}$; term of discount, 30 da.;
 $\$1250 + (\$1250 \times .05 \times 6.1 \div 12) = \1281.77 , amt.;
 $\$1281.77 \times .05 \times 1 \div 12 = \5.34 , discount;
 $\$1281.77 - \$5.34 = \$1276.43$, proceeds, *Ans.*

22. Due June $16\frac{1}{19}$; term of discount, 59 da.;
 $\$497.39 + (\$497.39 \times .06 \times 3.1 \div 12) = \505.10 , amt.;
 $\$505.10 \times .06 \times 59 \div 360 = \4.97 , discount;
 $\$505.10 - \$4.97 = \$500.13$, proceeds, *Ans.*
23. Due April $4\frac{1}{7}$; term of discount, 46 da.;
 $\$916.25 + (\$916.25 \times .24 \times 2.1 \div 12) = \954.73 , amt.;
 $\$954.73 \times .10 \times 46 \div 360 = \12.20 , discount;
 $\$954.73 - \$12.20 = \$942.53$, proceeds, *Ans.*

Art. 319.

2. $\$1265 \div (1 - .0105 = .9895) = \1278.42 , face, *Ans.*
3. $\$276.84 \div (1 - .0180\frac{1}{2} = .9819\frac{1}{2}) = \281.94 , face, *Ans.*
4. $\$1200 \div (1 - .0045\frac{5}{8} = .9954\frac{1}{8}) = \1205.524 , face, *Ans.*
5. $\$357.36 \div (1 - .0073\frac{1}{3} = .9926\frac{2}{3}) = \360 , face, *Ans.*
6. $\$2844 \div (1 - .049 = .951) = \2990.536 , face, *Ans.*
7. $\$236.28 \div (1 - .0155 = .9845) = \240 , face, *Ans.*
8. $\$496 \div (1 - .122 = .878) = \564.92 , face, *Ans.*
9. Due May $9\frac{1}{12}$; term of discount, 63 da.;
 $\$640 \div (1 - .0105 = .9895) = \646.79 , face, *Ans.*
10. Due July $15\frac{1}{18}$; term of discount, 60 da.;
 $\$380 \div (1 - .01 = .99) = \383.838 , face, *Ans.*
11. Due May $15\frac{1}{18}$; term of discount, 66 da.;
 $\$1260 \div (1 - .014\frac{2}{3} = .985\frac{1}{3}) = \1278.75 +, face, *Ans.*
12. $\$575 \div (1 - .01575 = .98425) = \584.20 , face, *Ans.*
13. $\$187.50 \div (1 - .036\frac{2}{3} = .963\frac{1}{3}) = \194.636 , face, *Ans.*

Art. 323.

(3.)

YR. MO. DA.	DIFF. BETWEEN DATES.	PAYMENTS.	PRINCIPAL.
1885 2 1	yr. mo. da.		\$500
1885 5 1	3 0	\$40	\$482.50
1885 11 13	6 12	\$20 }	\$474.35
1886 5 1	5 18	\$75 }	\$506.368,
1886 9 16	4 15		<i>Ans.</i>

(4.)

YR. MO. DA.	DIFF. BETWEEN DATES.	PAYMENTS.	PRINCIPAL.
1882 5 1	yr. mo. da.		\$475.50
1882 12 25	7 24	\$50	\$447.135
1883 7 10	6 15	\$15.75 }	\$427.27
1883 9 1	1 21	\$25.50 }	
1884 6 16	9 15	\$104	\$346.947
1885 4 13	9 27		\$366.98,
			<i>Ans.</i>

(5.)

YR. MO. DA.	DIFF. BETWEEN DATES.	PAYMENTS.	PRINCIPAL.
1882 5 1	yr. mo. da.		\$475.50
1882 12 25	7 24	\$50	\$450.226
1883 7 10	6 15	\$15.75 }	\$433.588
1883 9 1	1 21	\$25.50 }	
1884 6 16	9 15	\$104	\$357.048
1884 10 10	3 24		\$366.09
			<i>Ans.</i>

(6.)

YR. MO. DA.	DIFF. BETWEEN DATES.			PAYMENTS.	PRINCIPAL.
1882 6 20	yr.	mo.	da.		\$4800
1883 5 5		10	15	\$1200	\$3852
1884 8 14	1	3	9	\$950	\$3196.676
1885 5 12		8	28	\$2000	\$1339.457
1885 11 24		6	12		\$1382.32,

Ans.

(7.)

YR. MO. DA.	DIFF. BETWEEN DATES.			PAYMENTS.	PRINCIPAL.
1881 3 10	yr.	mo.	da.		\$900
1881 7 3		3	23	\$175	\$743.36
1881 10 21		3	18	\$284.50	\$473.357
1882 1 6		2	15	\$310	\$169.767
1882 5 16		4	10		\$173.75

Ans.

(8.)

YR. MO. DA.	DIFF. BETWEEN DATES.			PAYMENTS.	PRINCIPAL.
1881 3 10	r.	mo.	da.		\$900
1881 7 3		3	23	\$175	\$750.425
1881 10 21		3	18	\$284.50	\$486.186
1882 1 6		2	15	\$310	\$185.30
1883 11 15	1	10	9		\$216.29

Ans.

(9.)

YR. MO. DA.	DIFF. BETWEEN DATES.			PAYMENTS.	PRINCIPAL.
1879 4 1	yr.	mo.	da.		\$3840
1880 1 1		9	0	\$550	\$3434
1880 8 7		7	6	\$1000	\$2537.02
1881 2 10		6	3	\$790	\$1811.50
1881 7 13		5	3	\$264.50	\$1585.49
1882 4 1		8	18		\$1642.31

*Ans.***Art. 324.**

(2.)

Amt. of \$950, from Jan. 25 to Oct. 25,			
273 da			\$999.738
Amt. of \$225, from Mar. 2 to Oct. 25,			
237 da	\$235.226		
Amt. of \$174.19, from May 5 to Oct. 25,			
173 da	179.969		
Amt. of \$187.50, from Jan. 29 to Oct. 25,			
118 da	191.743		
Amt. of \$79.15, from Aug. 1 to Oct. 25,			
85 da	80.44	687.378	
			<i>Ans.</i> , \$312.36

(3.)

Amt. of \$1750, from Apr. 5 to Dec. 31,		
270 da.....		\$1827.671
Amt. of \$190, from May 10 to Dec. 31,		
235 da.....	\$197.339	
Amt. of \$230, from July 1 to Dec. 31,		
183 da.....	236.918	
Amt. of \$645, from Aug. 5 to Dec. 31,		
148 da.....	660.692	
Amt. of \$372, from Oct. 1 to Dec. 31,		
91 da.....	377.564	1472.513
	<u>Ans.,</u>	<u>\$355.158</u>

Art. 338.

2. $\$97\frac{1}{3} \times 250 = \24468.75 , *Ans.*
3. $\$1.12\frac{3}{8} \times 1000 \times 15 = \16856.25 , *Ans.*
4. $\overline{\$112 \times 120} - \overline{\$97\frac{1}{2} \times 120} = \1740 , gain, *Ans.*

Art. 339.

2. $\$12240 \div \$90 = 136$ shares, *Ans.*
 $\$12240 \div \$120 = 102$ shares, *Ans.*
3. $\$21560 \div \overline{\$97\frac{3}{4} + \frac{1}{4}} = 220$ shares, *Ans.*
4. $\$22567.50 \div \overline{\$110\frac{1}{2} + \frac{1}{8}} = 204$ shares, *Ans.*

Art. 340.

2. $\$1800 \div \$6 = 300$ shares ;
 $\$85 \times 300 = \25500 , *Ans.*
3. $\$2000 \div \$10 = 200$ shares ;
 $\$105.5 \times 200 = \21100 , *Ans.*

Art. 341.

2. $\$19650 \div \overline{\$97\frac{3}{4} + \frac{1}{8}} = 200$ shares ;
 $\$3.50 \times 200 = \700 , *Ans.*
3. $\$48000 \div 2 \div \$96 = 250$ shares ; $\$5 \times 250 = \1250 ;
 $\$48000 \div 2 \div \$112\frac{1}{2} = 213\frac{1}{3}$ shares ; $\$6 \times 213\frac{1}{3} = \1280 ;
 $\$1250 + \$1280 = \$2530$, *Ans.*
4. $\$8229 \div \$105\frac{1}{2} = 78$ shares ; $\$5 \times 78 = \390 ;
 $\$411.45 - \$390 = \$21.45$, loss, *Ans.*

Art. 342.

2. $\$6 \div \$108 = .05\frac{5}{9}$ or $5\frac{5}{9}\%$, *Ans.*
 $\$6 \div \$84 = .07\frac{1}{4}$ or $7\frac{1}{4}\%$, *Ans.*
3. $\$10 \div \$112\frac{1}{2} = .08\frac{8}{9}$ or $8\frac{8}{9}\%$, *Ans.*
4. $\$8 \div \$110 = .07\frac{3}{11}$ or $7\frac{3}{11}\%$, *Ans.*
 $\$5 \div \$75 = .06\frac{2}{3}$ or $6\frac{2}{3}\%$, *Ans.*
 $7\frac{3}{11}\% - 6\frac{2}{3}\% = \frac{2}{3}\frac{2}{3}\%$;
 8% bonds the better investment, by $\frac{2}{3}\frac{2}{3}\%$, *Ans.*
 $\$5 \div \$70 = .07\frac{1}{4}$ or $7\frac{1}{4}\%$; $\$6 \div \$80 = .07\frac{1}{2}$ or $7\frac{1}{2}\%$;
 $7\frac{1}{2}\% - 7\frac{1}{4}\% = \frac{1}{4}\%$;
 6% bonds the better investment, by $\frac{1}{4}\%$, *Ans.*
5. $\$7 \div \$105 = .06\frac{2}{3}$ or $6\frac{2}{3}\%$; $\$6 \div \$84 = .07\frac{1}{4}$ or $7\frac{1}{4}\%$;
 $7\frac{1}{4} - 6\frac{2}{3}\% = \frac{1}{12}\%$;
 6% bonds the better investment, by $\frac{1}{12}\%$, *Ans.*

Art. 350.

2. $\$1590 \times 1.0075 = \1601.925 , *Ans.*
3. $\$840 \times 1.02 = \856.80 , *Ans.*
4. $\$484.50 \times 1.015 = \491.7675 , *Ans.*

5. $\$1120 \times 1.01375 = \1135.40 , *Ans.*
6. $\$1200 \times .995 = \1194 , *Ans.*
7. $\$2480 \times .9825 = \2436.60 , *Ans.*
8. $\$560.80 \times .99125 = \555.89 , *Ans.*
9. $\$784.50 \times .98875 = \775.67 , *Ans.*
11. $\$4720 \times 1.0095 = \4764.84 , *Ans.*
12. $\$5275 \times .9769\frac{1}{2} = \5153.235 , *Ans.*
13. $\$6400 \times .99825 = \6388.80 , *Ans.*
14. $\$4800 \times .99825 = \4791.60 , *Ans.*

Art. 351.

3. $\$840 \div 1.0125 = \829.63 , *Ans.*
4. $\$1675 \div 1.00625 = \1664.596 , *Ans.*
5. $\$2600 \div .98875 = \2629.58 , *Ans.*
6. $\$972.50 \div .9925 = \979.848 , *Ans.*
7. $1324.74 \div 1.012 = \$1309.03$, *Ans.*
8. $\$750 \div .98275 = \763.164 , *Ans.*
9. $\$1875 \div 1.001 = \1873.126 , *Ans.*
10. $\$.115 \times 2780 \times .975 \div .985 = \316.45 , *Ans.*

Art. 356.

(2.)

$\$800 \times 1 =$	$\$800$	$\$9800 \div \$2550 = 3.84$; 3.84 mo.
$750 \times 4 =$	3000	Average term of credit
$1000 \times 6 =$	6000	$= 3$ mo. 25 da., <i>Ans.</i>
<hr/>	<hr/>	
$\$2550$	$\$9800$	

(3.)

$$\begin{array}{r} \$500 \times 3 = \$1500 \\ 750 \times 6 = 4500 \\ \hline 1200 \times 9 = 10800 \\ \hline \$2450 \qquad \qquad \$16800 \end{array}$$

6.85 mo. Average term of credit
= 6 mo. 26 da.
Dec. 1, 1880 + 6 mo. 26 da.
= June 27, 1881.

(4.)

$$\begin{array}{r} \$350 \times 2 = \$700 \\ 500 \times 3 = 1500 \\ 700 \times 6 = 4200 \\ \hline \$1550 \qquad \qquad \$6400 \end{array}$$

4.13 mo. Average term of credit
= 4 mo. 4 da.
Jan. 1, 1883 + 4 mo. 4 da.
= May 5, 1883.

(5.)

$$\begin{array}{r} \$1680 \\ \hline 560 \times 5 = \$2800 \\ 420 \times 3 = 1260 \\ 336 \times 2 = 672 \\ 280 \times 1 = 280 \\ \hline \$84 \qquad \qquad \$5012 \end{array}$$

59 $\frac{2}{3}$ mo.; 4 yr. 11 mo. 20 da., or
5 yr. 20 da. after last payment,
Ans.

\$84 is the amount yet due.

(7.)

$$\begin{array}{r} \$2500 \\ \hline 250 \times 5 = \$1250 \\ 300 \times 3 = 900 \\ 500 \times 1 = 500 \\ \hline \$1450 \qquad \qquad \$2650 \end{array}$$

1.82 mo.; balance is due 1 mo. 25 da.
after Oct. 1, or Nov. 26, *Ans.*

(8.)

$$\begin{array}{r} \$225 \times 35 = \$7875 \\ 350 \times 60 = 21000 \\ 750 \times 90 = 67500 \\ \hline \$1325 \qquad \qquad \$96375 \end{array}$$

73 da., average term of credit.
Dec. 15 + 73 da. = Feb. 26, *Ans.*

(9.)

$\$300 \times 0 =$	$\$—$	3.2 mo.; time of payment = Dec. 1,
$360 \times 3 =$	1080	1884 + 3 mo. 6 da. = Mar. 7, 1885.
$240 \times 4 =$	960	$\$1200 \div 1.018\frac{2}{3} = \1178.01 , cash value
$300 \times 6 =$	1800	of goods at purchase.
<hr/>	<hr/>	
\$1200	\$3840	

Art. 357.

(2.)

Due.	Amt.	No. days.	Products.
April 30.....	\$800	$\times 0 =$	0
May 15.....	350	$\times 15 =$	\$5250
Sept. 20.....	3800	$\times 143 =$	543400
	<hr/>		<hr/>
	\$4950		\$548650

111 da.; Apr. 30 + 111 da. = Aug. 19, 1885, *Ans.*

(3.)

Due.	Amt.	No. days.	Products.
May 15.....	\$375	$\times 42 =$	\$15750
April 3.....	550	$\times 0 =$	0
July 25.....	1100	$\times 113 =$	124300
May 2.....	250	$\times 29 =$	7250
	<hr/>		<hr/>
	\$2275		\$147300

65 da.; Apr. 3 + 65 da. = June 7, 1884, *Ans.*

(4.)

Due.	Amt.	No. days.	Products.
May 1.....	\$650	$\times 0 =$	0
June 10.....	380	$\times 40 =$	\$15200
July 12	900	$\times 72 =$	64800
“ 18	350	$\times 78 =$	27300
August 3.....	600	$\times 94 =$	56400
	<hr/>		<hr/>
	\$2880		\$163700

57 da.; May 1 + 57 da. = June 27, 1882, equated time.

Discounted April 5 for 2 mo. 22 da.

$$\$2880 \div 1.05_{\frac{7}{5}} = \$2730.72;$$

$$\$2880 - \$2730.72 = \$149.28, \text{ Ans.}$$

(5.)				
Due.	Amt.	No. days.		Products.
April 9.....	\$835	×	0 =	0
“ 17.....	320	×	8 =	\$2560
“ 25.....	475	×	16 =	7600
May 5.....	600	×	26 =	15600
“ 12.....	250	×	33 =	8250
	<u>\$2480</u>			<u>\$34010</u>

14 da.; April 9 + 14 da. = Apr. 23, 1884, *Ans.*

Art. 364.

1. $6 : 42 = \frac{6}{42} = \frac{1}{7} = 1 : 7, \text{ Ans.}$

2. $80 : 120 = \frac{80}{120} = \frac{2}{3} = 2 : 3, \text{ Ans.}$

3. $21 : 147 = \frac{21}{147} = \frac{1}{7} = 1 : 7, \text{ Ans.}$

4. $8\frac{4}{7} : 60 = \frac{\frac{60}{7}}{60} = \frac{1}{7} = 1 : 7, \text{ Ans.}$

5. $6\frac{1}{2} : 78 = \frac{\frac{13}{2}}{78} = \frac{1}{12} = 1 : 12, \text{ Ans.}$

6. $3\frac{1}{2} : 16\frac{2}{3} = \frac{7}{2} : \frac{50}{3} = 21 : 100, \text{ Ans.}$

7. $\frac{3}{4} : \frac{3}{5} = \frac{3}{4} \times \frac{5}{3} = \frac{5}{4} = 5 : 4, \text{ Ans.}$

8. $\frac{2}{7} : \frac{4}{9} = \frac{2}{7} \times \frac{9}{4} = \frac{9}{14} = 9 : 14, \text{ Ans.}$

9. $\frac{1}{6} : \frac{7}{10} = \frac{1}{6} \times \frac{10}{7} = \frac{5}{21} = 5 : 21, \text{ Ans.}$

10. $16 \times 2\frac{2}{7} = 36\frac{4}{7}, \text{ Ans.}$

11. $14.5 \div 3 = 4.8\frac{1}{3}, \text{ Ans.}$

12. $\frac{7}{8} \times \frac{3}{4} = \frac{21}{32}, \text{ Ans.}$

$$13. \frac{5}{16} \div \frac{3}{4} = \frac{5}{16} \times \frac{4}{3} = \frac{5}{12}, \text{ Ans.}$$

$$14. 1 \text{ mi.} : 120 \text{ rd.} = 320 \text{ rd.} : 120 \text{ rd.} = \frac{32}{12} = 2\frac{2}{3}, \text{ Ans.}$$

$$15. 3 \text{ gal.} : 5 \text{ pt.} = 24 \text{ pt.} : 5 \text{ pt.} = \frac{24}{5} = 4\frac{4}{5}, \text{ Ans.}$$

$$16. 8 \text{ yd.} : 9 \text{ in.} = 288 \text{ in.} : 9 \text{ in.} = 32, \text{ Ans.}$$

$$17. \$1.68 : \$.24 = \frac{\$1.68}{\$.24} = 7, \text{ Ans.}$$

$$18. 10\frac{1}{2} \text{ da.} : 63 \text{ da.} = \frac{10\frac{1}{2}}{63} = \frac{1}{6} = 1 : 6, \text{ Ans.}$$

$$19. 1660 \text{ sq. yd.} : 1070 \text{ sq. yd.} = \frac{166}{107} = 1\frac{59}{107}, \text{ Ans.}$$

$$20. 822 \text{ qt.} : 1316 \text{ qt.} = \frac{411}{658} = 411 : 658, \text{ Ans.}$$

$$21. 740 \text{ lb.} : 10800 \text{ lb.} = \frac{74}{1080} = \frac{37}{540}, \text{ Ans.}$$

$$22. 75 : 15 = \frac{5}{1} = \frac{1}{5} = \frac{1}{5}, \text{ reciprocal, Ans.}$$

$$23. 5 \text{ pt.} : 35 \text{ pt.} = \frac{5}{35} = \frac{1}{7} = \frac{1}{7}, \text{ reciprocal, Ans.}$$

Art. 372.

$$1. 52 \times 20 \div 8 = 130, \text{ Ans.}$$

$$2. 144 \times 12 \div 1 = 1728, \text{ Ans.}$$

$$3. 120 \times 20 \div 50 = 48, \text{ Ans.}$$

$$4. \$80 \times 8 \div \$4 = 160, \text{ Ans.}$$

$$5. 62.5 \times 5 \div 2.5 = 125, \text{ Ans.}$$

$$6. \$175.35 \times \frac{3}{4} \div \frac{1}{8} = \$601.20, \text{ Ans.}$$

$$7. \$27\frac{1}{4} \times 4\frac{1}{2} \div \$9\frac{3}{4} = 12\frac{5}{8} \text{ yd., Ans}$$

$$8. 16.05 \times 9.01 \div 5.35 = 27.03, \text{ Ans.}$$

$$10. \$5 \times \frac{3}{5} \div \$\frac{7}{8} = 3\frac{3}{4} \text{ yd., Ans.}$$

$$11. 40 \times 36 \div 24 = 60, \text{ Ans.}$$

$$12. (480 \times 30 \times 21) \div (84 \times 15) = 240, \text{ Ans.}$$

$$13. (48 \times 54 \times 14 \times 6) \div (56 \times 36 \times 12) = 9. \text{ Ans.}$$

$$14. (80 \times 3 \times 8 \times 7 \times 12) \div (60 \times 8 \times 6 \times 28) = 2, \text{ Ans.}$$

Art. 373.

3. 96 cd. : 40 cd. = \$240 : \$x.

$$\begin{array}{r|l} \$x & 40^5 \\ 96 & \$240^{20} \\ \hline x & = \$100, \text{ Ans.} \end{array}$$

4. $\left. \begin{array}{l} 20 \text{ H.} : 12 \text{ H.} \\ 9 \text{ mo.} : 18 \text{ mo.} \end{array} \right\} = 36 \text{ T.} : x\text{T.}$

$$\begin{array}{r|l} x & 12 \\ ^5 20 & 18 \\ 9 & \$6 \\ \hline 5 & 216 = 43\frac{1}{5} \text{ T., Ans.} \end{array}$$

5. 12 gal. : 63 gal. = \$30 : \$x.

$$\begin{array}{r|l} \$x & 63 \\ ^2 42 & \$30^5 \\ \hline 2 & \$315 = \$157.50, \text{ Ans.} \end{array}$$

6. 9 bu. : 100 bu. = 2 bbl. : x bbl.

$$\begin{array}{r|l} x & 100 \\ 9 & 2 \\ \hline 9 & 200 = 22\frac{2}{3} \text{ bbl., Ans.} \end{array}$$

7. $6\frac{1}{2}$ bu. : $9\frac{1}{4}$ bu. = \$3 : \$x.

$$\begin{array}{r|l} \$x & 9.25^{1.85} \\ ^{1.3} 6.5 & \$3 \\ \hline 1.3 & 5.55 = \$4.269, \text{ Ans.} \end{array}$$

8. 1.75 yd. : 87.5 yd. = \$.42 : \$x.

$$\begin{array}{r|l} \$x & \$.7^{.50} \\ 1.75 & \$.42 \\ \hline x & = \$21, \text{ Ans.} \end{array}$$

$$9. \$1500 : \$x = \$275.40 : \$1000.$$

\$x	1000
275.40	\$1500
275.40	1500000

$\$5446.62, \text{ Ans.}$

$$10. 3\frac{3}{4} \text{ lb.} : 11\frac{1}{4} \text{ lb.} = \$3.50 : \$x.$$

\$x	11.25 ³
3.75	\$3.50

$x = \$10.50, \text{ Ans.}$

$$11. \$325 : \$2275 = \$26.32 : \$x.$$

\$x	\$2275 ⁷
\$325	26.32

$x = \$184.24, \text{ Ans.}$

$$12. \begin{array}{l} 16 \text{ H.} : 5 \text{ H.} \\ 50 \text{ da.} : 90 \text{ da.} \end{array} \left. \vphantom{\begin{array}{l} 16 \text{ H.} : 5 \text{ H.} \\ 50 \text{ da.} : 90 \text{ da.} \end{array}} \right\} = 128 \text{ bu.} : x \text{ bu.}$$

x	90 ⁹
16	5
50	128 ⁸

$x = 72 \text{ bu.}, \text{ Ans.}$

$$13. \begin{array}{l} 18 \text{ men} : x \text{ men} \\ 16 \text{ da.} : 8 \text{ da.} \end{array} \left. \vphantom{\begin{array}{l} 18 \text{ men} : x \text{ men} \\ 16 \text{ da.} : 8 \text{ da.} \end{array}} \right\} = 42 \text{ rd.} : 28 \text{ rd.}$$

x	28 ⁴
8	18 ⁶
42	16

$x = 24 \text{ men}, \text{ Ans.}$

$$14. 18 \text{ mo.} : 45 \text{ mo.} = \$750 : \$x.$$

\$x	45 ¹⁵
18	\$750 ¹²⁵

$x = \$1875, \text{ Ans.}$

15. 10 mo. : x mo. = \$350 : \$1050.

$$\begin{array}{r|l} x & \$1050^{30} \\ \$350 & 10 \\ \hline x & = 30 \text{ mo., } Ans. \end{array}$$

16. \$480 : \$ x
30 mo. : 15 mo. } = \$84 : \$21.

$$\begin{array}{r|l} \$x & 21^3 \\ 15 & \$480^{40} \\ \$4 & 30 \\ \hline x & = \$240, Ans. \end{array}$$

17. $2\frac{1}{2} : 36\frac{1}{2}$ }
 $1\frac{2}{3} : 1\frac{1}{2}$ } = \$3.37 $\frac{1}{2}$: \$ x .

$$\begin{array}{r|l} \$x & \\ \$ & 2 \\ 7 & 5 \\ 2 & 73 \\ 2 & 3 \\ 2 & 6.75 \\ \hline 28 & \$1478.25 = \$52.79, Ans. \end{array}$$

18. 140 A. : x A. }
\$24.75 : \$16.50 } = 1 : 1.

$$\begin{array}{r|l} x & 1 \\ \$16.50 & 140^{28} \\ 1 & \$24.75^{4.95} \\ \hline .66 & \$138.60 = 210 \text{ A., } Ans. \end{array}$$

19. \$1728 : \$750 }
18 mo. : 54 mo. } = \$155.52 : \$ x .

$$\begin{array}{r|l} \$x & \$750^{125} \\ \$1728 & 54 \\ 18 & 155.52^{1.62} \\ \hline x & = \$202.50, Ans. \end{array}$$

$$\left. \begin{array}{l} 20. \quad 450 \text{ tiles} : x \text{ tiles} \\ \quad 144 \text{ sq. in.} : 72 \text{ sq. in.} \end{array} \right\} = 1 : 1.$$

$$\begin{array}{r|l} x & 1 \\ 72 & 450 \\ 1 & 144 \end{array}$$

$$x = 900 \text{ tiles, } Ans.$$

Art. 378.

$$\begin{array}{r|l} (4.) \\ x & 20 \\ 4 & 56 \\ 12 & 24 \\ \hline x = 560 \text{ bu., } Ans. \end{array}$$

$$\begin{array}{r|l} (5.) \\ x & 40^4 \\ 10 & 24^{12} \\ 3 & 9 \\ 10 & 46 \\ \hline 10 & 2208 = 220\frac{1}{2} \text{ Cd.,} \\ & Ans. \end{array}$$

$$\begin{array}{r|l} (6.) \\ \$x & 1000 \\ 456.25 & \$5000 \\ \hline 456.25 & \$5000000 \\ & \$10958.90, Ans. \end{array}$$

$$\begin{array}{r|l} (7.) \\ x & \$50 \\ .70 & \$3.50 \\ \hline .70 & 8.00 = 114\frac{2}{7} \text{ yd.,} \\ & Ans. \end{array}$$

$$\begin{array}{r|l} (8.) \\ \$x & \$7.5^{50} \\ 1.75 & \$1.26 \\ \hline x = \$63, Ans. \end{array}$$

$$\begin{array}{r|l} (9.) \\ x & \$39.50 \\ 2.37 & \$260.70 \\ \hline & \$2.37 \\ & \$118.50 \\ & 50 \text{ pwt.} \\ & = 2 \text{ oz. } 10 \text{ pwt., } Ans. \end{array}$$

$$\begin{array}{r|l} (10.) \\ x & 417.6^{11.6} \\ 12 & 5 \\ 2.9 & \$2.2 \\ \hline 2.9 & 58.0 = 20 \text{ men,} \\ & Ans. \end{array}$$

$$\begin{array}{r|l} (11.) \\ \$x & \$8^{19} \\ 3 & 24 \\ 9 & 18 \\ \hline 27 & \$95.60^{23.90} \\ & \$4995.10 \\ & \$185, Ans. \end{array}$$

(12.)

$\$x$	$\$00^{30}$
$\$$	$\$00^{100}$
7	15
<hr/>	
7	$\$45000$

$\$6428.57$, *Ans.*

(13.)

x	$\$0^{16}$
21	3
60	8
8	7
6	12
<hr/>	
6	$16 = 2\frac{2}{3}$ da., <i>Ans.</i>

(14.)

$\$x$	$295\frac{7}{8}$ sq. yd.
$.95$	$\$34.20^{28}$
<hr/>	
$.95$	$\$674.3766$
<hr/>	
$\$709.866$, <i>Ans.</i>	

(15.)

$\$x$	80
18	4
4	4
6	$\$30.24^{28}$
<hr/>	
$x = \$89.60$, <i>Ans.</i>	

(16.)

$\$x$	$\$480^{120}$
36	9
<hr/>	
$x = \$120$, <i>Ans.</i>	

(17.)

$\$x$	400^{20}
2	1
3	2
20	$\$15^5$
<hr/>	
$x = \$100$, <i>Ans.</i>	

(18.)

x	45^9
12	34.6
8.2	$12.3^{4.1}$
$.5$	22.5
17.3	3
10.25	10.25
<hr/>	
4.1	$36.9 = 9$ men, <i>Ans.</i>

(19.)

x	450^{25}
18	8
$3\frac{5}{6}$	4.2
$.27$	67.5
<hr/>	
103.5	840
<hr/>	
8.1159 ft., <i>Ans.</i>	

(20.)

x	1
12	95
1	7.5
<hr/>	
12	712.5
<hr/>	
59.375 da., <i>Ans.</i>	

(21.)

	$\$x$	45.75
.075	.375	$\$60^{12}$
	.075	549
		<hr style="width: 100%;"/>
		\$7320, <i>Ans.</i>

(22.)

	$\$x$	155.52
	18	\$750
67.5	202.5	54
	67.5	<hr style="width: 100%;"/>
		\$116640
		<hr style="width: 100%;"/>
		\$1728, <i>Ans.</i>

(23.)

	x	960^{192}
.175	.875	1200^{12}
	500	1.25^{25}
	.175	<hr style="width: 100%;"/>
		576.000
		<hr style="width: 100%;"/>
		3291 $\frac{3}{4}$ yd., <i>Ans.</i>

(24.)

	x	600^{200}
$3\frac{9}{10}$	20	2^{12}
	$4\frac{2}{3}$	6
	540	4.5^{15}
	14	<hr style="width: 100%;"/>
		200 = 14 $\frac{2}{7}$ da., <i>Ans.</i>

(25.)

	x	150^{25}
2.5	4	
	6	$1.75^{.7}$
		<hr style="width: 100%;"/>
		$x = 70$ lb., <i>Ans.</i>

Art. 384.

3. $\$8000 + \$12000 + \$20000 = \40000 , entire capital;

A's share of the gain	=	$\frac{8000}{40000}$	=	$\frac{1}{5}$	of	\$1680	=	\$336;
B's " "	=	$\frac{12000}{40000}$	=	$\frac{3}{10}$	" "	=	\$504;	
C's " "	=	$\frac{20000}{40000}$	=	$\frac{1}{2}$	" "	=	\$840.	

4. $\$1200 + \$1000 + \$600 = \2800 .

A's share of the rent	=	$\frac{1200}{2800}$	=	$\frac{3}{7}$	of	\$224	=	\$96;
B's " "	=	$\frac{1000}{2800}$	=	$\frac{5}{14}$	" "	=	\$80;	
C's " "	=	$\frac{600}{2800}$	=	$\frac{3}{14}$	" "	=	\$48.	

Art. 389.

2. 37×37 ; 42×42 ; 56×56 ; 75×75 .

Ans. 1369; 1764; 3136; 5625.

3. $15 \times 15 \times 15$; $18 \times 18 \times 18$; $42 \times 42 \times 42$; $54 \times 54 \times 54$.

Ans. 3375; 5832; 74088; 157464.

4. 63×63 ; $48 \times 48 \times 48$.

Ans. 3969; 110592.

$32 \times 32 \times 32 \times 32$; $12 \times 12 \times 12 \times 12 \times 12$.

Ans. 1048576; 248832.

6. $4^2 = 16$; $5^2 = 25$; $6^2 = 36$; $7^2 = 49$; $8^2 = 64$; $9^2 = 81$;

$10^2 = 100$; $11^2 = 121$; $12^2 = 144$; $13^2 = 169$;

$14^2 = 196$; $15^2 = 225$; $16^2 = 256$.

$4^3 = 64$; $5^3 = 125$; $6^3 = 216$; $7^3 = 343$; $8^3 = 512$;

$9^3 = 729$; $10^3 = 1000$; $11^3 = 1331$; $12^3 = 1728$;

$18^3 = 2197$; $14^3 = 2744$; $15^3 = 3375$; $16^3 = 4096$.

7. $(\frac{3}{4})^2 = \frac{9}{16}$; $(\frac{7}{8})^2 = \frac{49}{64}$; $(\frac{7}{16})^2 = \frac{49}{256}$; $(\frac{11}{12})^2 = \frac{121}{144}$;

$(\frac{9}{4})^2 = \frac{81}{16} = 5\frac{1}{16}$.

$(\frac{3}{4})^3 = \frac{27}{64}$; $(\frac{7}{8})^3 = \frac{343}{512}$; $(\frac{7}{16})^3 = \frac{343}{4096}$; $(\frac{11}{12})^3 = \frac{1331}{1728}$;

$(2\frac{1}{4})^3 = 11\frac{3}{8}$.

8. $(1.05)^2 = 1.1025$; $(.08)^2 = .0064$; $(4.8)^2 = 23.04$;

$(2.36)^2 = 5.5696$; $(.007)^2 = .000049$.

9. $(25.4)^2 = 645.16$, *Ans.*

10. $(106)^3 = 1191016$, *Ans.*

11. $(44\frac{1}{4})^2 = 1958\frac{1}{16}$, *Ans.*

12. $(\frac{11}{15})^4 = \frac{14641}{50625}$, *Ans.*

13. $(\frac{2}{7})^5 = \frac{32}{16807}$, *Ans.*

14. $(2\frac{1}{2})^6 = \frac{15625}{64}$, *Ans.*

15. $(.0342)^2 = .00116964$, *Ans.*

16. $.05^6 = .00000015625$,

Ans.

17. $(36.02)^3 = 46733.803208$,

Ans.

18. $(182\frac{1}{8})^2 = 33169\frac{3}{4}$, *Ans.*

19. $(4.07\frac{1}{2})^2 = 16.6056\frac{1}{4}$, *Ans.*

20. $(1\frac{9}{10})^5 = 24.76099$, *Ans.*

Art. 390.

3. 2304.	5. 9604.	7. 11025.	9. 38809.
4. 3136.	6. 15625.	8. 50625.	10. 116964.

Art. 391.

3. 39304.	11. 830.584.	19. $\frac{271000}{79507}$.
4. 91125.	12. .421875.	20. 1520875.
5. 262144.	13. 669921.875.	21. $2023\frac{97}{256}$.
6. 373248.	14. .000250047.	22. 5.887.
7. 1953125.	15. 42.875000.	23. 640000.
8. 6028568.	16. $95757\frac{39}{64}$.	24. 2540.0390625.
9. 13144256.	17. $\frac{343}{512}$.	25. 125.
10. 3.511808.	18. $\frac{15625}{32768}$.	

Art. 396.

3. 36.	10. 14.4.	17. 14.0048+.	24. 64.
4. 49.	11. 3.05.	18. .035.	25. 1.
5. 54.	12. 145.	19. $\frac{25}{81}$.	26. 1.4142.
6. 75.	13. 109.	20. $\frac{84}{96}$.	27. 1.7320.
7. 107.	14. 324.	21. 4.213+.	28. 2.8284.
8. 144.	15. 516.	22. 2.68+.	29. 3.4641.
9. 11.2.	16. 103.9.	23. 36.37.	30. 5.0990.

31. $\sqrt{1016064}$ sq. ft. = 1008; 1008 ft., *Ans.*

32. $\sqrt{208 \text{ rd.} \times 13} = 52$; 52 rd., *Ans.*

33. $\sqrt{40225}$ rd. = 200.56 rd., *Ans.*

34. $\sqrt{21170.25}$ sq. rd. = $145\frac{1}{2}$ rd., *Ans.*

35. $\sqrt{216 \text{ rd.} \times 24} = 72$, length in rods of side of square.

Distance around rectangular field, 480 rd.;

“ “ square “ 288 rd.;

$$480 \text{ rd.} : 288 \text{ rd.} = \$312 : \$x = \$187.20, \text{ Ans.}$$

36. $\sqrt{55225} = 235$ men, *Ans.*

Art. 398.

1. $\sqrt{12^2 + 16^2} = 20$, *Ans.*

2. $\sqrt{35^2 \text{ ft.} - 28^2 \text{ ft.}} = 21 \text{ ft.}$, *Ans.*

3. $\sqrt{53^2 \text{ yd.} - 28^2 \text{ yd.}} = 45 \text{ yd.}$, *Ans.*

4. $\sqrt{20^2 \text{ ft.} + 16^2 \text{ ft.}} = 25 \text{ ft. } 7.34 \text{ in.}$, *Ans.*

5. $\sqrt{36^2 \text{ ft.} + 15^2 \text{ ft.}} = 39 \text{ ft.}$, *Ans.*

6. $\sqrt{380^2 \text{ ft.} - 120^2 \text{ ft.}} = 360 \text{ ft. } 6.66 \text{ in.}$, *Ans.*

Art. 400.

3. 25.	8. 1598.	13. .45.	18. 2.0800.
4. 55.	9. $\frac{10}{11}$.	14. 2.34.	19. 27.15.
5. 73.	10. $\frac{24}{5}$.	15. 1.259.	20. 60.8.
6. 83.	11. 1.42+.	16. 1.5874.	
7. 354.	12. 5.5.	17. 1.8171.	

21. $\sqrt[3]{46656} \text{ cu. in.} = \sqrt[3]{27} \text{ cu. ft.} = 3 \text{ ft.}$, *Ans.*

22. $\sqrt[3]{91125} \text{ cu. ft.} = 45 \text{ ft.}$, length of edge ;
 $45^2 \text{ ft.} \times 6 = 12150 \text{ sq. ft.}$, *Ans.*

23. $\sqrt[3]{2150.42 \text{ cu. in.} \times 150} = 68 + ; 68 \text{ in.} = 5 \text{ ft. } 8 \text{ in.} +$, *Ans.*

Art. 401.

1. $\$16.50 \times 5.7375 = \94.67 , *Ans.*
2. 1 ft. 7.8 in. = 19.8 in.; 1 rd. = 198 in.;
 $\frac{19.8}{198} = .1$, *Ans.*
3. $\frac{7}{8} - \frac{6}{7} = \frac{1}{56} = 10$; $\frac{56}{56} = 10 \times 56 = 560$, *Ans.*
4. $\$1575 \div 3 \times 8 = \4200 , *Ans.*
5. $\frac{1}{3}$ of $5\frac{1}{3} = 1\frac{5}{9}$; $\frac{1}{4}$ of $\$32 \div 16 \times 9 = \$4\frac{1}{2}$, *Ans.*
6. L. C. M. of 10, 14, 16, and 20 = 560;
hence, 560 A., *Ans.*
7. 115 lb. = .0575 T.; $\$20 \times .0575 = \1.15 , *Ans.*
8. $2352 \text{ lb.} \times 2 \div 56 = 84 \text{ bu.}$; $\$.98 \times 84 = \82.32 , *Ans.*
9. $1 \text{ mi.} \times 320 \times 4 = 1280 \text{ rd.}$, *Ans.*
10. $42 \text{ ft.} \times 20\frac{1}{2} \times 2 \div 100 = 17.22 \text{ squares}$;
 $\$4.625 \times 17.22 = \$79.64\frac{1}{4}$, *Ans.*
11. 20 bu. 3 pk. 6 qt. = 20.9375 bu.;
 $\$.80 \times 20.9375 = \16.75 , *Ans.*
12. $56.5 \text{ rd.} \times 24.6 \div 160 = 8.686875 \text{ A.}$
= 8 A. 109.9 sq. rd., *Ans.*
13. $\$173.74 \div 154.4375 \times 1.5 = \1.6875 , *Ans.*
14. $(20 \times 4) + (1\frac{1}{2} \times 4) = 86 \text{ ft. length of four walls}$;
 $86 \text{ ft.} \times 8 \times 1\frac{1}{2} = 1032 \text{ cu. ft.}$;
 $1032 \div 24.75 = 41.7 - \text{pch.}$
15. $\$12.75 \div 150 = \$.085$; $\$93.50 \div .085 = 1100 \text{ lb.}$, *Ans.*
16. $\$15.90 \times 240000 \div 1000 = \3816 ;
 $\$2.25 \times 240000 \div 100 = \5400 ;
 $\$5400 - \$3816 = \$1584$, *Ans.*

17. $\$8000 \times .15 = \1200 , value of what he owned ;
 $\$1200 \times .375 = \450 , “ “ lost, *Ans.*

(18.)

4 mo.	11 da.	7 hr.	5 min.
3	20	15	21
<hr/>			
	21	15	44, <i>Ans.</i>

Borrow 31 da. for March.

19. $231 \text{ cu. in.} \times 2000 = 462000 \text{ cu. in.}$, solid contents ;
 $\sqrt[3]{462000} = 77.3 + \text{in.} = 6 \text{ ft. } 5.3 \text{ in.}$, *Ans.*

20. $\frac{9}{2} \times \frac{9}{2} \times \frac{6}{1} = \frac{1728}{1} \times \frac{1}{231} = \frac{69984}{231} = 908\frac{8}{7} \text{ gal.}$
 $= 14\frac{230}{39} \text{ hhd.}$, *Ans.*

21. $\frac{1\frac{3}{4}}{4\frac{1}{2}} \div \frac{2\frac{1}{3}}{2\frac{1}{4}} = \frac{7}{18} \div \frac{8}{27} = \frac{7}{18} \times \frac{27}{8} = \frac{3}{8}$;
 $\frac{3}{8} \times \frac{2}{10} = \frac{3}{20} = .15$, *Ans.*

22. $\$200 : \$1000 \}$
 $6 \text{ mo.} : x \text{ mo.} \} = 1 : 1.$

x	$\$200$
$^5 \$1000$	6
<hr/>	<hr/>
5	$6 = 1\frac{1}{5} \text{ mo.}$, <i>Ans.</i>

23. $\$2356.80 \div .40 = \5892 , left ;
 $\$5892 + \$2356.80 = \$8248.80$, *Ans.*

24. $20\% \text{ of } .375 = .075$; $\frac{3}{5} = .6$;
 $.075 \div .6 = .125$ or $12\frac{1}{2}\%$, *Ans.*

25. $\$2250 \div \overline{1-0180\frac{2}{6}} = \2291.44 , *Ans.*

26. $1 \times .09 \times 5\frac{1}{3} = .48$, *Ans.*

27. $\sqrt{50^2 + 40^2} \div 2 = 32.01$; $\sqrt{32^2 \times 15^2} = 35.35 \text{ ft.}$, *Ans.*

28. $\sqrt{20^2 + 15^2} = 25 \text{ ft.}$, *Ans.*

(29.)

$$\begin{array}{rcl}
 \$35.26 + \text{interest for 101 da.} & = & \$36.15 \\
 \$48.65 + \text{“ “ 70 “} & = & 49.50 \\
 \$6.48 + \text{“ “ 56 “} & = & 6.57 \\
 \$50 + \text{“ “ 30 “} & = & 50.38 \\
 & & \hline
 & & \$142.60, \text{ Ans.}
 \end{array}$$

$$\begin{aligned}
 30. \quad \$1000 \div .065 &= \$15384.61, \text{ stock required;} \\
 \$15384.61 \times 1.05 &= \$16153.84, \text{ Ans.}
 \end{aligned}$$

$$\begin{aligned}
 31. \quad \text{Int. on \$1 for 4 mo. 3 da.} &= \$.0239\frac{1}{6}; \\
 \$1 - \$.0239\frac{1}{6} &= \$.9760\frac{5}{6}, \text{ proceeds of \$1;} \\
 \$875.50 \div .9760\frac{5}{6} &= \$896.95, \text{ Ans.}
 \end{aligned}$$

$$32. \quad 25 \text{ rd.} : 40 \text{ rd.} = 4 \text{ rd.} : x \text{ rd.} = 6\frac{2}{5} \text{ rd., Ans.}$$

$$33. \quad 18 \text{ in.} : 42 \text{ ft.} = 40 \text{ in.} : x \text{ ft.} = 93\frac{1}{3} \text{ ft., Ans.}$$

$$\begin{aligned}
 34. \quad \left. \begin{array}{l} \$500 : \$960 \\ 1 \text{ yr.} : x \text{ yr.} \end{array} \right\} &= \$50 : \$60 = .625 \text{ yr.} = 7 \text{ mo. } 15 \text{ da., Ans.}
 \end{aligned}$$

$$\begin{aligned}
 35. \quad \$250 \times 100 \times .70 \div 1.20 &= \$14583.33\frac{1}{3}, \text{ stock at } 8\%; \\
 \$250 \times 100 \times .06 &= \$1500, \text{ income of } 6\% \text{ stock;} \\
 \$14583.33\frac{1}{3} \times .08 &= \$1166.66\frac{2}{3}, \text{ income of } 8\% \text{ stock;} \\
 \$1500 - \$1166.66\frac{2}{3} &= \$333.33\frac{1}{3}, \text{ Ans.}
 \end{aligned}$$

$$36. \quad \$33.25 \div (.07 \times 5) = \$95. \text{ Ans.}$$

$$\begin{aligned}
 37. \quad (14 \times 6 \times 2) + (14 \times 3\frac{5}{8} \times 2) + (5\frac{5}{8} \times 3\frac{5}{8} \times 2) &= 168 \text{ sq. ft.} \\
 + 107\frac{1}{3} \text{ sq. ft.} + 44\frac{1}{3} \text{ sq. ft.} &= 320\frac{1}{3} \text{ sq. ft., Ans.}
 \end{aligned}$$

$$\begin{aligned}
 38. \quad (30 \text{ ft.} \times 10 \times 7\frac{1}{2}) \div 128 &= 17.578 \text{ Cd.;} \\
 \$3.60 \times 17.578 &= \$63.28, \text{ Ans.}
 \end{aligned}$$

$$39. \quad P = \frac{I}{R \times T}; \quad \$1290 \div \overline{.06 \times 1} = \$21500, \text{ Ans.}$$

$$\begin{aligned}
 40. \quad 20 \text{ ft.} \times 8 \times 3\frac{1}{2} \times 1728 \div 2150.42 &= 449.995 \text{ bu.;} \\
 \$1.28 \times 449.995 &= \$575.99, \text{ Ans.}
 \end{aligned}$$

41. $\$6840 \div \$5.70 = 1200$; 1200 bbl.;
 $\$6.625 \times 1200 = \7950 , sold for;
 $\$6840 \times .06 \times 401 \div 360$
 $= \$457.14$, int. for 1 yr. 1 mo. 11 da.;
 $\$7950 - (\$6840 + \$457.14) = \652.86 , *Ans.*
42. $(52 \text{ ft.} \times 35 \div 9) \div \frac{3}{4} = 260$; 260 yd.;
 $\$1.75 \times 260 = \455 , *Ans.*
43. $\$.90 \times (1 + .20) = \1.08 , selling price;
 $\$1.08 \div (1 - .10) = \1.20 , asking price, *Ans.*
44. $\$430 \div 1.0825 = \397.228 , present worth
 $\$430 - \$397.228 = \$32.77$, disc't, *Ans.*
45. $41.25 \text{ ft.} \times 33 \times 8 \div 27 = 403\frac{1}{3}$ cu. yd.;
 $\$48 \times 403\frac{1}{3} = \193.60 , *Ans.*
46. $\$28 + (\$28 \times .20) = \$33.60$; $\$33.60 \div 56 = \$.60$, *Ans.*
47. $\$1000 \div \$6 = 175$, No. of shares;
 $\$105 \times 175 = \18375 , *Ans.*
48. $\$336.42 - \$311.50 = \$24.92$, int.;
 $\$24.92 \div \$311.50 \times 16 \div 12 = .06$, or 6%, *Ans.*
49. $\$3500 - \$2100 = \$1400$, B owns;
 $\$1400 \div 1.40 = \1000 , B put in;
 $\$2100 \div 1.40 = \1500 , C put in.
50. $4\frac{1}{2} + \frac{8}{5} \div 4.23 = 7.1566 \div 4.23 = 1.69 +$, *Ans.*
51. $\$1.20 \times 2430 \div 60 = \48.60 , *Ans.*
52. $\$86 \times 42 = \3612 , cost;
 $\$112\frac{1}{2} \times 42 = \4725 , sold;
 $\$4725 - \$3612 = \$1113$, gain, *Ans.*
53. $\$21000 \times .008 = \168 ; $\$15400 \times .00625 = \96.25 ;
 $\$168 + \$96.25 = \$264.25$, *Ans.*
54. $\sqrt[3]{373248}$ cu. in. = 72 in. = 6 ft., *Ans.*

55. $\$200 \times 1.593848 = \318.769 , *Ans.*

56. $\$148.352 \div 9.728 = \15.25 , *Ans.*

57. $\$1370 \div 1.015 = \1349.754 , cash value; $\$20.246$, disc't;
 $\$1349.754 + \overline{\$1349.754 \times .25} = \$1687.192$, sold for;
 $\$1687.192 - \overline{\$350} \div 2 = \$668.596$, amt. of each note;
 $\$668.596 \div 1.015 = \658.715 , present worth at 3 mo.;
 $\$668.596 \div 1.03 = \649.122 , “ “ 6 “;
 $(\$658.715 + \$649.116 + \$350 + \$20.246) - \$1370$
 $= \$308.083$, gain, *Ans.*

58. $8\frac{1}{3} : 6\frac{2}{3} = 12\frac{1}{2} : x = 9\frac{9}{10}$ da., *Ans.*

59. $9 \text{ in.} \times 9 = 81 \text{ sq. in. in 1 stone};$
 $144 \text{ in.} \times 9 = 1296 \text{ sq. in. in 1 sq. yd.};$
 $\overline{1296 \div 81} \times 40 = 640 \text{ stones}$, *Ans.*

60. Interest commenced Apr. 1, 1882;

Amt. of note, July 1, 1882 (3 mo.).	\$1015
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Payment.....		560
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New principal..	\$455
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Amt. Dec. 1, 1882 (5 mo.).....		\$466.37
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Payment.....		406
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New principal.....		\$60.37
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Amt. Aug. 23, 1884 (1 yr. 8 mo. 22 da.), $\$66.63$, *Ans.*

61. $\$300 - \$250 = \$50$; $\$ \frac{50}{250} = \frac{1}{5} = 20\%$, *Ans.*

62. $50.62 \text{ rd.} \times 30.4 \div 160 = 9.614 \text{ acres};$
 $\$45.75 \times 9.614 = \439.84 , *Ans.*

(63.)

$$$.42 \times 60 = \$25.20$$

$$8.50 \times 40 = 340.00$$

$$.58 \times 56 = 32.48$$

$$\underline{\$397.68}$$

$$\$397.68 + \$3.9768 = \$401.6568 ;$$

$$\$401.6568 - \$12.0497 = \$389.607, \text{ Ans.}$$

$$64. 18 \text{ T.} = 36000 \text{ lb. ;}$$

$$\left. \begin{array}{l} 36000 \text{ lb.} \div 60 = 600 \text{ bu. wheat ;} \\ 36000 \text{ lb.} \div 200 = 180 \text{ bbl. pork ;} \\ 36000 \text{ lb.} \div 196 = 183\frac{3}{4} \text{ bbl. flour.} \end{array} \right\} \text{ Ans.}$$

$$65. 200 \text{ ft.} \times 40 \times 10 \div 128 = 625 \text{ cords ;}$$

$$\$3.25 \times 625 = \$2031.25, \text{ Ans.}$$

$$66. 4.5 \text{ ft.} \times 4.5 \times 10.5 \times 1728 = 367416 \text{ cu. in. ;}$$

$$367416 \div 231 = 1590.54 \text{ gal., Ans.}$$

$$67. \$3665.20 \div 1.12 = 3272.50, \text{ present worth ;}$$

$$\$3272.50 - \$2964.12 = \$308.38, \text{ gain, Ans.}$$

$$68. 60 \text{ ft.} \times 70 \times 20 \times 55 = 4620000 ;$$

$$4620000 \text{ lb.} \div 2000 \text{ lb.} = 2310 \text{ tons, Ans.}$$

$$69. 40.4 \times 16.25 \div 160 = 4.103 \text{ A. ;}$$

$$\$32.50 \times 4.103 = \$133.3475, \text{ Ans.}$$

$$70. \text{ Bank disc't of } \$1 \text{ for } 63 \text{ da., at } 5\%, \text{ is } \$.00875 ;$$

$$\text{Proceeds of } \$1 \text{ is } \$1 - .00875 = \$.99125 ;$$

$$\$1200 \div .99125 = \$1210.592, \text{ face, Ans.}$$

$$71. \$1.65 \times 48.75 = \$80.4375, \text{ Ans.}$$

(72.)

$$\$575 \div 1.05 = \$547.619, \text{ present worth of } \$575 ;$$

$$\$925 \div 1.075 = \underline{860.465}, \quad " \quad " \quad \$925 ;$$

$$\text{Ans. } \$1408.084, \quad " \quad " \quad \$1500.$$

73. $\$436.60 \div 1.015 = \430.147 , face, *Ans.*

74. 30 men : 1 = x men : 4.
11 da. : 1 = $\frac{11}{5}$ da.

$$\begin{array}{r|l} x & 4 \\ 11 & 5 \\ & 30 \\ & 11 \\ \hline \end{array}$$

$x = 600$ men, *Ans.*

75. $\sqrt{160 \text{ sq. rd.} \times 10} = 40 \text{ rd.}$; $40 \text{ rd.} \times 4 = 160 \text{ rd.}$, *Ans.*

76. $\sqrt[3]{2744} = 14 \text{ ft.}$, *Ans.*

77. $\$3864 \div .9895 = \3905 , face, *Ans.*

78. Distance around a quarter-section, $640 \text{ rd.} = 10560 \text{ ft.}$;
 $10560 \text{ ft.} \div 8.5 \text{ ft.} = 1242.35$ lengths;
 $6 \text{ rails} \times 1242.35 = 7454.1$, whole number rails;
 $\$50 \times 7454.1 \div 1000 = \372.705 , cost, *Ans.*

79. Int. of $\$2510$ for 1 yr. 8 mo. at $3\frac{1}{2}\%$ = $\$146.4166$;
 $\$146.4166 \div (\$627.50 \times .07) = 3.33\frac{1}{3} \text{ yr.}$
 $= 3 \text{ yr. } 4 \text{ mo.}$, *Ans.*

80. 7 men : $\$10 = \frac{12}{x}$ men : $\$10$; $x = 2\frac{1}{3} \text{ da.}$, *Ans.*
 4 da.

81. $\$2000 - \$1600 = \$400$, int.;
 $\$400 \div (\$1600 \times .06) = 4.1656 +$
 $= 4 \text{ yr. } 2 \text{ mo.}$, nearly, *Ans.*

82. $160 \text{ A.} : \$450 = 840 \text{ A.} : \x ; $x = \$2362.50$, *Ans.*

83. Bought at 80 and sold at 110; gain, 30 per share;
 $30 \div 80 = .37\frac{1}{2}$, or $37\frac{1}{2}\%$, *Ans.*

84. $2564 \text{ lb.} + 2723 \text{ lb.} + 3000 \text{ lb.} + 3109 \text{ lb.} = 11396 \text{ lb.}$;
 $11396 \text{ lb.} \div 56 \text{ lb.} = 203\frac{1}{2} \text{ bu.}$;
 $\$.62 \times 203\frac{1}{2} = \126.17 , *Ans.*

85. $18720 \div 120 = 156$; 156 ft., *Ans.*
86. $\$2.50 \times (24640 \div 100) = \616 , *Ans.*
87. $\$222.75 \div \$14.50 = 15.362\frac{2}{9}$; $15.362\frac{2}{9}$ ft., *Ans.*
88. $\$365.80 \times .08 \div 12 \times 10 = \24.386 , net;
 $\$365.80 + \$24.386 = \$390.186$, amt., *Ans.*
89. 9648 lb. = 9.648 *thousand* pounds;
 $9.648 \div 2 = 4.824$ tons; $\$16.50 \times 4.824 = \79.596 , *Ans.*
90. $\$1 - .20 = \$.80$; $\$.80 - .08 = \$.72$;
 $\$.72 - .036 = \$.684$, cost;
 $\$1 - \$.684 = \$.316$, gain on $\$1$, or $31\frac{6}{10}\%$, *Ans.*
91. $\$12500 \div 5 \times 100 = \250000 , *Ans.*
92. $160 \text{ sq. rd.} \times 40 = 6400 \text{ sq. rd.}$; $\sqrt{6400} = 80 \text{ rd.}$, *Ans.*
93. $\$2860 - \frac{1}{4} \text{ of } \$2860 = \$2145$, what he collected;
 $\$2145 - 5\% \text{ of } \2145 , or $\$107.25$
 $= \$2037.75$, what he pays over, *Ans.*
94. $500 \text{ bu.} - 75 \text{ bu.} = 425 \text{ bu.}$;
 $\$637.50 + 20\% \text{ of } \$637.50 = \$765$;
 $\$765 \div 425 = \1.80 , *Ans.*
95. $36 \text{ ft. by } 24 \text{ ft.} = 864 \text{ sq. ft.}$;
 $144 \text{ sq. in.} \times 864 = 124416 \text{ sq. in.}$;
 $124416 \text{ sq. in.} \div 8 \text{ in. by } 8 \text{ in., or } 64 \text{ sq. in.}$
 $= 1944 \text{ tiles}$, *Ans.*
96. $\$4048 \div 88 = 46$, No. of shares;
 $\$115 \times 46 = \5290 , sold for;
 $\$5290 - \$4048 = \$1242$, whole gain;
 $115 - 88 = 27$, gain on 1 share;
 $27 \div 88 = .301\frac{1}{2}$, or $30\frac{1}{2}\%$, *Ans.*

97. 2 yr. 3 mo. 18 da. = 2.3 yr.; $\$3500 \times 2.3 \div 100 = \80.5 ;
 $\$1249.50 \div \$80.5 = .15\frac{1}{2}\%$, or $15\frac{1}{2}\%$, *Ans.*
98. 320 ft. by 72 ft. by 3.5 ft. = 80640 cu. ft.
 = $2986\frac{2}{3}$ cu. yd.;
 $\$.56 \times 2986\frac{2}{3} = \1672.53 , *Ans.*
99. $\$250 \times 6 = \$1500 = \frac{1500}{11} = \frac{3}{11}$; $\frac{3}{11} \times \$825 = \225 , A's.
 $275 \times 8 = 2200 = \frac{2200}{5} = \frac{2}{5}$; $\frac{2}{5} \times \$825 = \330 , B's.
 $450 \times 4 = 1800 = \frac{1800}{5} = \frac{18}{5}$; $\frac{18}{5} \times \$825 = \270 , C's.
100. 8 ft. by 6 ft. by $4\frac{1}{2}$ ft. = 216 cu. ft.;
 $1728 \text{ cu. in.} \div 216 = 373248 \text{ cu. in.}$;
 $373248 \text{ cu. in.} \div 2150.42 \text{ cu. in.} = 173.569 + \text{bu.}$, *Ans.*
101. 15 ft. \div 30 in. = 6; 6 strips required;
 18 ft. = 6 yd.; 6 yd. + 12 in., length of each strip;
 $6\frac{1}{3} \text{ yd.} \times 6 = 38 \text{ yd.}$ to cover the floor;
 $\$1.87\frac{1}{2} \times 38 = \71.25 , cost, *Ans.*
102. 320 rd. \times 3 = 960 rd., entire distance around the field;
 $960 \text{ rd.} \div 4 = 240 \text{ rd.}$, length of one side;
 $240 \text{ rd. by } 240 \text{ rd.} = 57600 \text{ sq. rd.}$
 = 360 acres of area, *Ans.*
103. $\$8.50 \times (4500 \div 1000) + \$1.50 = \$39.75$, *Ans.*
104. $2150.42 \text{ cu. in.} \times 300 \div 1728 = 373.336 \text{ cu. ft.}$, *Ans.*
105. $\$1250 \times .08 \div 12 \times 21.1 = \175.833 , bank disc't;
 $\$1250 - \$175.833 = \$1074.167$, proceeds;
 $\$1250 \div 1.14 = \1096.49 , present worth;
 $\$1096.49 - \$1074.17 = \$22.32$, difference, *Ans.*
106. 28 ft. by 4 ft. by 6 ft. = 672 cu. ft. = $5\frac{1}{4}$ Cd.;
 $\$1.12\frac{1}{2} = 5.25 = \5.906 , *Ans.*

(107.)

$$\begin{array}{rcl}
 \$1.20 \times 40000 & = & \$48000, \text{ first cost ;} \\
 \$.06 \times 40000 & = & 2400, \text{ freight ;} \\
 \$.005 \times 40000 & = & \underline{200}, \text{ insurance ;} \\
 & & \$50600, \text{ total cost ;} \\
 \$1.625 \times 40000 & = & \underline{65000}, \text{ sold for ;} \\
 & & \$14400, \text{ profit, } Ans.
 \end{array}$$

108. $500 \text{ ft.} \times 4 - 12 \text{ ft.}$ equals entire length of walk ;
 $1988 \text{ ft. by } 3 \text{ ft.} = 5964 \text{ sq. ft.} = 662\frac{2}{3} \text{ sq. yd., } Ans.$

109. $24 \text{ ft. by } 18 \text{ ft. by } 11\frac{1}{2} \text{ ft.} = 4968 \text{ cu. ft. ;}$
 $4968 \text{ cu. ft.} \div 80 \text{ cu. ft.} = 62\frac{1}{10} ; 62\frac{1}{10} \text{ min., } Ans.$

110. $\$28 \times 120 + \$480 = \$3840, \text{ cost ;}$
 $\$3840 + \frac{1}{3} \text{ of } \$3840 = \$4320, \text{ sold for ;}$
 $\$4320 - \$3840 = \$480, \text{ whole gain ;} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} Ans.$
 $\$4320 \div 120 = \$36, \text{ received per acre.}$

111. $\$321 \div 1.07 = \$300, \text{ present worth, } Ans.$

112. $\$11320 - (\$3200 + \$3500 + \$2500) = \$2120 ;$

Amt. of	\$3500	for 6 mo. at 7%	=	\$3622.50
"	\$2500	" 10 mo. at 7%	=	2645.83 $\frac{1}{3}$
"	\$2120	" 1 yr. 3 mo. at 7%	=	2305.50
		Cash,		<u>3200.00</u>
				\$11773.83 $\frac{1}{3}$, <i>Ans.</i>

113. $45 \text{ men} : 1 = x : 1 ; x = 54 \text{ men ;}$
 $3 \text{ mo.} \quad \quad \quad 2\frac{1}{2} \text{ mo.} \quad 54 \text{ men} - 45 \text{ men} = 9 \text{ men, } Ans.$

114. $\$1.20 \times 1.20 = \$1.44, \text{ selling price ;} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} Ans.$
 $\$1.44 \div (1 - .10) = \$1.60, \text{ asking price.}$

(115.)

$$\$87.50 \times 150 = \$13125, \text{ cost ;}$$

$$\$75 \times 60 = \$4500$$

$$\$95.60 \times 50 = \underline{4780}$$

\$9280, rec'd for 110 acres ;

$$150 \text{ A.} - 110 \text{ A.} = 40 \text{ A., remainder ;}$$

$$(\$13125 - \$9280 + \$1155) \div 40 = \$125, \text{ Ans.}$$

$$116. \sqrt{8^2 + 16^2} = 17.88 \text{ ft., Ans.}$$

$$117. \$1 - .025 = \$.975, \text{ course of exchange ;}$$

$$.01225, \text{ disc't of \$1, for 63 da., at 7\% ;}$$

$$.975 - .01225 = \$.96275, \text{ cost of \$1 exchange ;}$$

$$\$512.36 \div \$.96275 = \$532.18, \text{ Ans.}$$

$$118. \$30 \times (48 \times 25 \times 1\frac{1}{4} \times 2) \div 1000 = \$90, \text{ Ans.}$$

$$119. \$1920 \times .147 = \$282.24, \text{ sim. int. for 2 yr. 5 mo. 12 da.}$$

$$\$1920 + \$282.24 = \$2202.24, \text{ amt. ;}$$

$$\$1920 \times 1.1236 \times 1.027 = \$2215.56, \text{ amt. at comp. int. ;}$$

$$\$2215.56 - \$1920 = \$295.56, \text{ comp. int. ;}$$

$$\$1920 \div 1.147 = \$1673.93, \text{ present worth ;}$$

$$\$1920 - \$1673.93 = \$246.07, \text{ true discount ;}$$

$$\$1920 \times .1475 = \$283.20, \text{ bank discount ;}$$

$$\$1920 - \$283.20 = \$1636.80, \text{ proceeds ;}$$

$$\$1920 \div .8525 = \$2252.20, \text{ face of note.}$$

NOTE.—The conditions in the above are in no wise dependent one upon another.

(120.)

$$\$1.40 \times 2500 = \$3500, \text{ purchase price ;}$$

$$\$3500 \times .045 = 157.50, \text{ insurance ;}$$

$$\$3500 \times .03 = 105.00, \text{ freight ;}$$

$$\$3500 \times .025 = 87.50, \text{ commission ;}$$

$$\underline{\hspace{1.5cm}} \$3850.00, \text{ entire cost ;}$$

$$(\$3850 + \$3850 \times .40) \div 2500 = \$2.156, \text{ Ans.}$$

121. $\$.625 \times 30 = \18.75 , poll tax ;

$$\$4342.75 - \$18.75 = \$4324, \text{ property tax ;}$$

$$\$4324 \div 188000 = .023, \text{ rate of tax ;}$$

$$\$2500 \times .023 + \$.625 = \$58.125, \text{ Ans.}$$

122. $\$27.50 \times 450 = \12375 , first cost ;

$$\text{amt. of } \$12375, \text{ at } 5\frac{1}{2}\%, \text{ for 4 yr. 11 mo. 20 da.}$$

$$= \$15759.22 ;$$

$$\$34 \times \frac{2}{3} \text{ of } 450 = \$6120 ;$$

$$\$32.55 \times \overline{450 - 180} = \$8788.50 ;$$

$$\$15759.22 - (\$6120 + \$8788.50) = \$850.72, \text{ loss, Ans.}$$

123. The asking price was 125% of the cost, and the selling price was $1.25 \times .86 = 1.075 = 107\frac{1}{2}\%$ of the cost ; hence,

$$\$170 \div .075 = \$2266.66\frac{2}{3}, \text{ cost ;}$$

$$\$2266.66\frac{2}{3} + \$170 = \$2436.66\frac{2}{3}, \text{ sold for ;}$$

$$\$2266.66\frac{2}{3} \times 1.25 = \$2833.33\frac{1}{3}, \text{ asking price.}$$

Art. 410.

2. $\frac{45}{99} = \frac{5}{11}, \text{ Ans.}$

3. $\frac{66}{99} = \frac{2}{3}, \text{ Ans.}$

4. $\frac{297}{999} = \frac{11}{37}, \text{ Ans.}$

5. $\frac{675}{999} = \frac{25}{37}, \text{ Ans.}$

6. $\frac{324}{999} = \frac{12}{37}, \text{ Ans.}$

7. $\frac{4158}{9999} = \frac{42}{101}, \text{ Ans.}$

8. $\frac{6435}{9999} = \frac{65}{101}, \text{ Ans.}$

9. $\frac{95121}{99999} = \frac{39}{41}, \text{ Ans.}$

10. $2\frac{297}{999} = 2\frac{11}{37} = \frac{85}{37}, \text{ Ans.}$

$12\frac{81}{999} = 12\frac{3}{37} = \frac{447}{37}, \text{ Ans.}$

12. $.5\frac{7}{9} = \frac{57}{10} = \frac{52}{90} = \frac{26}{45}, \text{ Ans.}$

13. $.04\frac{8}{9} = \frac{48}{100} = \frac{44}{900} = \frac{11}{225}, \text{ Ans.}$

14. $.100\frac{4}{9} = \frac{1004}{1000} = \frac{904}{9000} = \frac{113}{1125}, \text{ Ans.}$

15. $.64\frac{72}{99} = \frac{6472}{100} = \frac{6408}{9900} = \frac{178}{275}, \text{ Ans.}$

16. $.785\frac{2}{99} = \frac{7852}{10} = \frac{7845}{9900} = \frac{523}{636}, \text{ Ans.}$

17. $.01\frac{26}{99} = \frac{126}{100} = \frac{125}{9900} = \frac{5}{396}, \text{ Ans.}$

18. $7.54\frac{3}{99} = 7\frac{543}{10} = 7\frac{538}{990} = 7\frac{69}{495}, \text{ Ans.}$

19. $2.56\frac{4}{99} = 2\frac{564}{10} = 2\frac{56}{990}, \text{ Ans.}$

20. $5.2\frac{7}{9} = 5\frac{27}{10} = 5\frac{25}{40} = 5\frac{5}{13}, \text{ Ans.}$

21. $.04\frac{648}{999} = \frac{4648}{100} = \frac{4644}{99900} = \frac{43}{925}, \text{ Ans.}$

22. $.351\frac{35}{999} = \frac{35135}{100} = \frac{35100}{99900} = \frac{13}{37}, \text{ Ans.}$

23. $7.01\frac{26}{99} = 7\frac{126}{100} = 7\frac{125}{9900} = 7\frac{5}{396}, \text{ Ans.}$

Art. 423.

(1.)

$$\begin{array}{r} 3 \text{ mi. } 51 \text{ ch. } 6 \text{ l.} \\ \underline{80} \\ 291 \text{ ch.} \\ \underline{100} \\ 29106 \text{ l., } Ans. \end{array}$$

(2.)

$$\begin{array}{r} \text{lb } 16 \text{ } \bar{5} \text{ } 7 \text{ } 3 \text{ } 3 \\ \underline{12} \\ \bar{5} \text{ } 199 \\ \underline{8} \\ 3 \text{ } 1595 \\ \underline{3} \\ \text{D } 4785, Ans. \end{array}$$

(3.)

$$\begin{array}{r} \text{Cong. } 4 \text{ O. } 5 \text{ f } \bar{5} \text{ } 8 \\ \underline{8} \\ \text{O. } 37 \\ \underline{16} \\ \text{f } \bar{5} \text{ } 600 \\ \underline{8} \\ \text{f } 3 \text{ } 4800, Ans. \end{array}$$

(4.)

$$\begin{array}{r} 4 \text{ fath. } 3 \text{ ft. } 8 \text{ in.} \\ \underline{6} \\ 27 \text{ ft.} \\ \underline{12} \\ 332 \text{ in., } Ans. \end{array}$$

(5.)

$$\begin{array}{r} 10 \text{ S. } 10^{\circ} \text{ } 10' \text{ } 10'' \\ \underline{30} \\ 310^{\circ} \\ \underline{60} \\ 18610' \\ \underline{60} \\ 1116610'', Ans. \end{array}$$

(6.)

$$\begin{array}{r} 75 \text{ A. } 4 \text{ sq. ch. } 18 \text{ P.} \\ \underline{10} \\ 754 \text{ sq. ch.} \\ \underline{16} \\ 12082 \text{ P.} \\ \underline{625} \end{array}$$

$$7551250 \text{ sq. l., } Ans.$$

(7.)

$$\begin{array}{r} 2 \text{ com. yr.} \\ \underline{365} \\ 730 \text{ da.} \\ \underline{24} \\ 17520 \text{ hr., } Ans. \end{array}$$

(8.)

$$\begin{array}{r} 16^{\circ} \text{ } 24' \text{ } 26'' \\ \underline{60} \\ 984' \\ \underline{60} \\ 59066'', Ans. \end{array}$$

(9.)

.1934 S.

30

5.8020°

60

48.1200'

60

7.2000''5° 48' 7.2'', *Ans.*

(10.)

lb 15

12

22) 5 180 (5 8 3 1 $\supset 1\frac{4}{11}$.

176

*Ans.*4

8

22) 3 32

22

10

3

22) \supset 30

22

8

(11.)

1 geog. mi. = 1.15 com. mi.;

3 " = 3.45 "

.67 lea. \times 3.45 = 2.3115 mi.;.3115 mi. \times 320 = 99.68 rd.;.68 rd. \times $16\frac{1}{2}$ = 11.22 ft.;22 ft. \times 12 = 2.64 in.;

2 mi. 99 rd. 11 ft. 2.64 in.,

Ans.

(12.)

f 5.7

8

f 5.6

60

m 36.0f 3 5 m 36, *Ans.*

(13.)

715°

60

42.900'

60

54.000''42' 54'', *Ans.*

(14.)

Cong. 2

8

5) O. 16 (O. 3 f 5 3 f 3 1

15

m 36, *Ans.*1

16

5) f 5 16

15

1

8

5) f 3 8

5

3

60

5) m 180

180

(15.)

$\frac{3}{8}$ of lb $2\frac{1}{2}$ = lb $1\frac{5}{8}$.

lb 15

12

16) $\overline{5180}$ ($\overline{51132}$, *Ans.*

176

4

8

16) $\overline{532}$

32

(16.)

Cir. 9

12

16) $\overline{108}$ (6 S. $22^{\circ} 30'$,

96 *Ans.*

12

30

16) $\overline{360^{\circ}}$

352

8

60

16) $\overline{480'}$

480

(17.)

f $\overline{543}$

8

96) f $\overline{5344}$ (f $\overline{533\text{ m}}$ 35,

288 *Ans.*

56

60

96) $\overline{\text{m } 3360}$

3360

(18.)

.625 fath.

6

$\overline{3.750}$ ft.

12

$\overline{9.000}$ in.

3 ft. 9 in., *Ans.*

(19.)

3 S.

30

7) 90° ($12^{\circ} 51' 25\frac{5}{7}''$,

84 *Ans.*

6

60

7) $\overline{360'}$

357

3

60

7) $\overline{180''}$

175

5

(20.)

.765 lb.

12

$\overline{9.180}$ oz.

20

$\overline{3.600}$ pwt.

24

$\overline{14.400}$ gr.

9 oz. 3 pwt. 14.4 gr., *Ans.*

(21.)

$$\begin{array}{r}
 17 \text{ ch.} \quad 31 \text{ l.} \\
 12 \quad \quad 87 \\
 \hline
 30 \text{ ch.} \quad 18 \text{ l.} \\
 \quad \quad 2 \\
 \hline
 60 \text{ ch.} \quad 36 \text{ l.} \\
 \quad 100 \\
 6036 \text{ l.} \\
 7.92 \\
 \hline
 12 \overline{) 47805.12} \\
 3983.76 \text{ ft., } \textit{Ans.}
 \end{array}$$

(22.)

$$\begin{array}{r}
 105.85 \text{ ch.} \\
 40.15 \\
 \hline
 10 \overline{) 4249.8775} \text{ sq. ch.} \\
 424.98775 \text{ A., } \textit{Ans.}
 \end{array}$$

Art. 424.

(1.)

$$\begin{array}{r}
 25 \overline{) 8470 \text{ l.}} \\
 4 \overline{) 338 \text{ rd. } 20 \text{ l.}} \\
 80 \overline{) 84 \text{ ch. } 2 \text{ rd.}} \\
 \hline
 1 \text{ mi. } 4 \text{ ch. } 2 \text{ rd. } 20 \text{ l.,} \\
 \textit{Ans.}
 \end{array}$$

(2.)

$$\begin{array}{r}
 6 \overline{) 1435 \text{ ft.}} \\
 239 \text{ fath. } 1 \text{ ft., } \textit{Ans.}
 \end{array}$$

(3.)

$$\begin{array}{r}
 60 \overline{) 2007200''} \\
 60 \overline{) 33453' 20''} \\
 \hline
 557^{\circ} 33' 20'', \textit{Ans.}
 \end{array}$$

(4.)

$$\begin{array}{r}
 8 \overline{) f 3 6748} \\
 16 \overline{) f 3 843 f 3 4} \\
 8 \overline{) O. 52 f 3 11} \\
 \text{Cong. } 6 \text{ O. } 4 \text{ f } 3 11 \text{ f } 3 4, \\
 \textit{Ans.}
 \end{array}$$

(5.)

$$\begin{array}{r} 60 \) \ 5270 \text{ naut. mi.} \\ \hline 87^\circ 50 \text{ naut. mi., } Ans. \end{array}$$

(6.)

$$\begin{array}{r} 3 \) \ 90562 \\ \hline 8 \) \ 330187 \ 91 \\ \hline 12 \) \ 33773 \ 33 \\ \hline \text{lb } 314 \ 55 \ 33 \ 91, \\ Ans. \end{array}$$

(7.)

$$\begin{array}{l} f \ 35 \ \text{m} \ 36 = \text{m} \ 336; \\ f \ 51 = \text{m} \ 480; \\ \frac{336}{480} = f \ 51 \frac{7}{10}, \text{ } Ans. \end{array}$$

(8.)

$$\begin{array}{l} 18 \text{ fath.} = 108 \text{ ft.}; \\ 1 \text{ mi.} = 5280 \text{ ft.}; \\ \frac{108}{5280} = \frac{9}{440} \text{ mi., } Ans. \end{array}$$

(9.)

$$\begin{array}{l} 4\frac{1}{2} \text{ ft.} = \frac{9}{2} \text{ ft.}; \\ 66 \text{ ft.} = 1\frac{3}{2} \text{ ft.}; \\ \frac{9}{1\frac{3}{2}} = \frac{3}{4} \text{ ch., } Ans. \end{array}$$

(10.)

$$\begin{array}{l} 2 \text{ mi. } 3 \text{ rd. } 1 \text{ yd.} = 3537.5 \text{ yd.}; \\ 1 \text{ lea.} = 3.45 \text{ mi.} = 6072 \text{ yd.}; \\ 3537.5 \div 6072 = .5825 + \text{lea.,} \\ Ans. \end{array}$$

(11.)

$$\begin{array}{l} 1 \text{ mi.} = 80 \text{ ch.}; \\ \frac{16.02}{80} = .20025 \text{ mi., } Ans. \end{array}$$

(12.)

$$\begin{array}{l} 7^\circ 42' 48'' = 27768''; \\ 25^\circ 42' 40'' = 92560''; \\ \frac{27768}{92560} = .3, \text{ } Ans. \end{array}$$

(13.)

$$\begin{array}{l} 1 \text{ quad.} = 90^\circ = 324000''; \\ 3' 12'' = 192''; \\ 324000 \div 192 = 1687.5 \text{ min.}; \\ 1687.5 \text{ min.} = 1 \text{ da. } 4 \text{ hr. } 7 \text{ min.} \\ 30 \text{ sec., } Ans. \end{array}$$

(14.)

$$\begin{array}{r} 625 \) \ 4550000 \text{ sq. l.} \\ \hline 16 \) \ 7280 \text{ P.} \\ \hline 10 \) \ 455 \text{ sq. ch.} \\ \hline 45.5 \text{ A.} \end{array}$$

$$\$50 \times 45.5 = \$2275, \text{ } Ans.$$

(15.)

$$\begin{array}{l} 60 \text{ ch.} \times 4 = 240 \text{ ch.}; \\ 4 \text{ rd.} \times 240 = 960 \text{ rd., } Ans. \end{array}$$

(16.)

$$423 \text{ geog. mi.} \div 60 = 7^\circ 3', \text{ } Ans.$$

Art. 426.

1. $23040 \text{ A.} \div 288 = 80$; $\frac{80}{640} \text{ A.} = \frac{1}{8} \text{ Sec.}$, *Ans.*
2. $(\frac{1}{2} \text{ mi.} \times 4 \times 320 \div 2 \text{ rd.}) \times 3 \times 6 = 5760 \text{ rails}$;
 $\$40 \times 5.76 = \230.40 , *Ans.*
3. $\$2.25 \times 320 = \720 ; $\$4.375 \times 160 = \700 ;
 $\$700 - (\$720 \div 2) = \$340$, gain, *Ans.*
4. $160 \text{ A.} + 80 \text{ A.} = 240 \text{ A.}$; $\frac{240}{640} \text{ A.} = \frac{3}{8} \text{ Sec.}$, *Ans.*
5. $\$2 \times 320 = \640 , purchase; $\$2.75 \times 80 = \220 ;
 $\$3.50 \times 40 = \140 ; $\$3.84 \times 80 = \307.20 ;
 $320 \text{ A.} - (80 \text{ A.} + 40 \text{ A.} + 80 \text{ A.}) = 120 \text{ A.}$ left;
 $\$220 + \$140 + \$307.20 - \$640 = \$27.20$, gain, *Ans.*

HALF-SECTION.

N. $\frac{1}{2}$ of S. W. $\frac{1}{4}$, 80 Acres.	N. W. $\frac{1}{4}$ of S. E. $\frac{1}{4}$, 40 Acres.	E. $\frac{1}{2}$ of S. E. $\frac{1}{4}$, 80 Acres.
Remainder of S. $\frac{1}{2}$ of Section 4.		

6. $\$1.25 \times 640 = \800 , purchase;
 $\$2.50 \times 80 = \200 ; $\$1.75 \times 40 = \70 ;
 $\$2 \times 80 = \160 ; $\$3 \times 20 = \60 ;
 $\$640 \text{ A.} - (80 \text{ A.} + 40 \text{ A.} + 80 \text{ A.} + 20 \text{ A.}) = 420 \text{ A.}$ left;
 $\$2.25 \times 420 = \945 ;
 $\$945 + \$200 + \$70 + \$160 + \$60 - \$800 = \$635$, gain.

SECTION.

	<p>N. E. $\frac{1}{4}$ of N. W. $\frac{1}{4}$, 40 Acres.</p>		
		<p>W. $\frac{1}{2}$ of S. W. $\frac{1}{4}$ of N. E. $\frac{1}{4}$ 20 A.</p>	
		<p>W. $\frac{1}{2}$ of S. E. $\frac{1}{4}$, 80 Acres.</p>	
<p>$\frac{3}{4}$ of S. W. $\frac{1}{4}$, 80 Acres.</p>			

Art. 432.

1. $\$4.8665 \times 28 = \136.262 , Ans.
2. $\$4.8665 \times 25.5 = \124.09575 . Ans.
3. $\$.193 \times 25.5 = \4.9215 , Ans.
4. $\$.238 \times 42.5 = \10.115 , Ans.
5. $\$.997 \times 125 = \124.625 , Ans.
6. $\$5.11 \times 15 = \76.65 , Ans.

$$7. \ 5 \text{ cr. } 3\text{s.} = 28\text{s.}; \ \$.2433 \times 28 = 6.8124, \text{ Ans.}$$

$$8. \ \$.193 \times 75.5 = \$14.5715, \text{ Ans.}$$

$$9. \ \$.238 \times 82 = \$19.516, \text{ Ans.}$$

$$\begin{array}{r} (10.) \\ 326 \text{ sov. } 10\text{s.} \\ \underline{20} \\ 6530\text{s.} \\ \underline{12} \\ 78360\text{d.}, \text{ Ans.} \end{array}$$

$$\begin{array}{r} (12.) \\ £54 \text{ } 10\text{s. } 8\text{d.} \\ \underline{20} \\ 690\text{s.} \\ \underline{12} \\ 8288\text{d.}, \text{ Ans.} \end{array}$$

$$\begin{array}{r} (11.) \\ 26 \text{ fr. } 50 \text{ ct.} \\ \underline{100} \\ 2650 \text{ ct.}, \text{ Ans.} \end{array}$$

$$\begin{array}{r} (13.) \\ 12 \) \ 24684\text{d.} \\ \underline{5 \) \ 2057\text{s.}} \\ 411 \text{ cr. } 2\text{s.}, \text{ Ans.} \end{array}$$

$$14. \ \$86.85 \div .193 = 45 \text{ fr.}, \text{ Ans.}$$

$$15. \ \$225.40 \div 4.8665 = \$46.316 \text{ sov.}, \text{ Ans.}$$

$$16. \ \$57.70 \div .238 = 242.436 \text{ marks}, \text{ Ans.}$$

$$17. \ \$194.66 \div 4.8665 \div 2 = 20 \text{ half-sov.}, \text{ Ans.}$$

Art. 436.

$$\begin{array}{r} (2.) \\ 7 \text{ hr. } 9 \text{ min. } 19\frac{1}{4} \text{ sec.} \\ \underline{15} \\ 107^{\circ} \quad 19' \quad 48\frac{3}{4}'', \text{ Ans.} \end{array}$$

(3.)

12 hr.	0 min.	0 sec.
9	1	37
2	58	23, dif. time.
		15
44°	35'	45'', dif. long.
77	51	
122	26	45 W., <i>Ans.</i>

Art. 437.

(2.)

Washington,	77°	0'	15'' W.
Rome,	12	27	E.
15)	89	27	15, dif. long.
	5 hr.	57 min.	49 sec., <i>Ans.</i>

(3.)

Chicago,	87°	37'	45'' W.
Paris,	2	20	E.
15)	89	57	45, dif. long.
	5 hr.	59 min.	51 sec., <i>Ans.</i>

(4.)

New Orleans,	90°	2'	30'' W.
New York,	74	3	W.
15)	15	59	30, dif. long.
	1 hr.	3 min.	58 sec., <i>Ans.</i>

(5.)

Jefferson City,	92°	8'	0'' W.
Albany,	73	44	50 W.
15)	18	23	10, dif. long.
	1 hr. 13 min. 32 $\frac{2}{3}$ sec., <i>Ans.</i>		

(6.)

St. Louis,	90°	15'	15'' W.
Richmond,	77	25	45 W
15)	12	49	30, dif. long.
	51 min. 18 sec., <i>Ans.</i>		

(7.)

Mexico,	99°	5' W.
New York,	74	3 W.
	25	2, dif. long.
		4
	1 hr. 40 min. 8 sec., <i>Ans.</i>	

(8.)

Ann Arbor,	83°	43'	0'' W.
Berlin,	13	23	45 E.
15)	97	6	45, dif. long.
	6 hr. 28 min. 27 sec., <i>Ans.</i>		

(9.)

San Francisco,	122°	26'	45'' W.
Mexico,	99	5	W.
15)	23	21	45, dif. long.
	1 hr. 33 min. 27 sec., <i>Ans.</i>		

(10.)

Cincinnati,	84°	29'	31'' W.
Boston,	71	3	30 W.
15)	13	26	1, dif. long.
Take	53 min. 44 $\frac{1}{5}$ sec., dif. time ;		
From	6 hr.		
A. M.	5 hr.	6 min.	15 $\frac{1}{5}$ sec., <i>Ans.</i>

Chicago,	87°	37'	45'' W.
Boston,	71	3	30 W.
15)	16	34	15, dif. long.
Take	1 hr.	6 min.	17 sec., dif. time ;
From	6		
A. M.	4 hr.	53 min.	43 sec., <i>Ans.</i>

St. Louis,	90°	15'	15'' W.
Boston,	71	3	30 W.
15)	19	11	45, dif. long.
Take	1 hr.	16 min.	47 sec., dif. time ;
From	6		
A. M.	4 hr.	43 min.	13 sec., <i>Ans.</i>

(11.)

Univ. Va.,	78°	31'	30'' W.
Berlin,	13	23	45 E.
15)	91	55	15, dif. long.
	6 hr.	7 min.	41 sec., dif. time ;
P. M.	6		
A. M.	12 hr.	7 min.	41 sec. (next day),
<i>Ans.</i>			

St. Paul,	95°	4'	55'' W.
Univ. Va.,	78	31	30 W.
	15) 16	33	25, dif. long.
Take	1 hr.	6 min.	13 $\frac{2}{3}$ sec., dif. time ;
From	6		
P. M.	4 hr.	53 min.	46 $\frac{1}{3}$ sec., <i>Ans.</i>

Astoria,	124°	0'	0'' W.
Univ. Va.,	78	31	30 W.
	15) 45	28	30, dif. long.
Take	3 hr.	1 min.	54 sec., dif. time.
From	6		
P. M.	2 hr.	58 min.	6 sec., <i>Ans.</i>

(12.)

New York,	74°	3' W.
Paris,	2	20 E.
	76	23, dif. long.
		4
	5 hr.	5 min. 32 sec., later, <i>Ans.</i>

Art. 438.

NOTE.—Exact interest differs from ordinary interest only, when the time is in days.

(2.)

$$\begin{aligned}
 \$1600 \times .06 &= \$96 \text{ Int. for 1 year.} \\
 \$1600 \times .06 \div 4 &= \$24 \text{ Exact int. for 3 mo.} \\
 &\underline{\$120, \text{ Ans.}}
 \end{aligned}$$

$$3. \quad \$875.60 \times .07 \div 365 \times 63 = \$10.58, \text{ Ans.}$$

(4.)

$$\begin{aligned}
 \$648.40 \times .08 \times 1\frac{1}{4} &= \$64.84 \text{ Int. for } 1\frac{1}{4} \text{ yr.} \\
 \$648.40 \times .08 \div 365 \times 20 &= \$2.84 \text{ Int. for 20 da.} \\
 &= \$67.68 \text{ Exact int. for 1 yr.} \\
 &\quad 3 \text{ mo. 20 da.} \\
 \$648.40 \times .078\frac{1}{3} \times \frac{4}{3} &= \$67.72 \text{ Int. by } 6\% \text{ method.} \\
 \text{Difference} &= \$.04, \text{ Ans.}
 \end{aligned}$$

5. From May 1 till Oct. 15 is 167 da. ;
 $\$3000 \times .06 \div 365 \times 167 = \$82.36, \text{ Ans.}$

6. From Nov. 1 till Apr. 10 is 160 da. ;
 $\$500 \times .05 \div 365 \times 160 = \$10.96, \text{ Ans.}$

Art. 439.

(2.)

$$\begin{aligned}
 \$1500 \times .07 \times 4 &= \$420 \\
 \$105 \times .07 \times 6 &= \underline{44.10} \\
 &= \$464.10, \text{ Ans.}
 \end{aligned}$$

3. $\$3500 \times .08 \times 10 = \2800 ;
 $280 \times .08 \times 45 = \1008 , int. on 1 year's int. for 45 yr. ;
 $\$3500 + \$2800 + \$1008 = \$7308, \text{ Ans.}$

4. $(\$2500 \times .06 \times 6) + (\$150 \times .06 \times 15) + \2500
 $= \$3535$, annual int. 6 yr. ;
 $\$2500 \times 1.418519 = \3546.30 , comp. int. for 6 yr. ;
 $\$3545.30 - \$3535 = \$11.30, \text{ Ans.}$

5. $(\$575 \times .08 \times 9.5) + (\$46 \times .08 \times 40.5) + \575
 $= \$1161.04, \text{ Ans.}$

6. $(\$600 \times .06 \times 2) + (\$36 \times .06) + \$600 = \$674.16, \text{ Ans.}$

Art. 440.

	<i>Int. on int.</i>	<i>Yearly int.</i>	<i>Prin.</i>
Int. of prin. to Nov. 22, 1879.....		\$52.32	\$872
Amt. of 1st payment.....		<u>29.06</u>	
Bal. of unpaid yearly int.		23.26	
Int. of prin. to Nov. 22, 1882.....		156.96	
Int. on 1 year's int. 3 years.	\$9.42		
Int. on bal. of unpaid yearly int. 3 yr.	4.19	<u>13.61</u>	
		193.83	
Amt. of 2d payment.....		<u>96.48</u>	
Bal. of unpaid yearly int.		97.35	
Int. of prin. to Nov. 22, 1885.....		156.96	
Int. on 1 year's int. 3 years.	9.42		
Int. on bal. of unpaid yearly int. 3 yr.	17.52	<u>17.52</u>	
	26.94	254.31	
Amt. of 3d payment.....	7.10		
Bal. of int. on int.	19.84		
Int. of prin. to Nov. 22, 1887.....		104.64	
Int. on 1 year's int. 1 year.	3.14		
Int. on bal. of unpaid yearly int. 2 yr.	30.52	<u>53.50</u>	<u>412.45</u>
			1284.45
Amt. of 4th payment.....			<u>416.33</u>
New principal			868.12
Int. of new prin. to Dec. 28, 1888.....			57.30
Int. on 1 year's int. 1 mo. 6 da.			<u>.31</u>
Due, Dec. 28, 1888.....			<u>\$925.73</u>

EXPLANATION.—We compute the interest for one year from the date of the note, as a payment is made within that year, and deduct the amount of the payment at the end of the year from the interest due. The balance of interest bears interest till Nov. 22, 1882. The amount of the payment at the end of this year exceeds the interest on interest due. We there-

fore deduct the amount of the payment from the total interest due, and have a balance of unpaid yearly interest, \$97.35, which bears simple interest till Nov. 22, 1885. At this date the amount of the payment is less than the interest on interest due. We therefore deduct the amount of the payment from the amount of interest on interest, and have a remainder of \$19.84, which is without interest. The amount of unpaid yearly interest at this date bears simple interest till the next balance.

The amount of the fourth payment, Nov. 22, 1887, exceeds the total interest due. We therefore deduct it from the sum of the interest and principal. The remainder forms a new principal, which bears simple interest to the settlement of the note, Dec. 28, 1888, and one year's interest on the same bears interest from Nov. 22, 1888, to Dec. 28, 1888, which interest, added to the new principal, gives the amount due Dec. 28, 1888—\$925.73.

Art. 446.

2. $495 \div 5.15 = 96.12$, No. dollars, *Ans.*
4. $\$4.865 \times 600.75 \times 1.005 = \2937.26 , *Ans.*
5. $5460 \times 1.0025 \div 5.2125 = 1050.10$, No. dollars, *Ans.*
6. $\$.95\frac{5}{8} \div 4 \times (2560 + 2560 \times .00125)$
 $= 612.765$, No. dollars, *Ans.*
7. $\$.41\frac{1}{2} \times (3000 + 3000 \times .0025) = \1248.11 , *Ans.*
8. $\$4.88\frac{1}{4} \times 384.525 = \1877.44 , *Ans.*
9. $\$.96\frac{5}{8} \times (2872 \div 4) = \693.767 , *Ans.*
10. $2750 \div 5.1975 = 529.10$, No. dollars, *Ans.*
11. $(\$.4125 \times 3750) + (\$.955 \times 1000 \div 4) + \4.85×500
 $= \$4210.625$, *Ans.*

Art. 447.

4. $\$7500 \div \$4.86 = 1543.209$, or £1543 4s. 2d., *Ans.*
5. $(\$395.75 \div \$.95125) \times 4 = 1664.13$, or 1664.13 marks, *Ans.*
6. $5.22\frac{1}{4} \text{ fr.} \times 4856 = 25360.46$ francs, *Ans.*

7. $\$3750.67 \div \$4.25 = 8825.1$, or 8825.1 guilders, *Ans.*
8. $(\$4000 \div \$9375) \times 4 = 17066\frac{2}{3}$ marks, *Ans.*
9. $5.15\frac{1}{2}$ fr. $\times 6186 = 31888.83$ francs, *Ans.*
10. 5.1675 fr. $\times 2500 = 12918.75$ francs, *Ans.*
11. $\$4.855 \times 125 = \606.875 , *Ans.*

Art. 454.

1. $20 - 1 = 19$; $19 \times 5 + 8 = 103$, last term, *Ans.*
2. $203 - 39 \times 5 = 8$, last term, *Ans.*
3. $(13 - 1) \times 5 = 60$; $75 - 60 = 15$, *Ans.*
4. $100 =$ first term; $7 =$ com. diff.; $46 =$ No. terms;
 $\frac{46 - 1}{7} \times 7 = 315$; $315 + 100 = 415$; $\$415$. *Ans.*
5. $17 - 2 = 15$; $15 \div 5 = 3$, com. diff., *Ans.*
6. $\frac{4160 - 800}{60} = 56$; $56 \div 800 = .07$, or 7% , *Ans.*

NOTE.—In 60 yr. the interest is added 60 times, making with the first term 61 terms.

7. $43 - 7 = 36$; $36 \div 4 = 9$; $9 + 1 = 10$, No. terms, *Ans.*
8. $40 - 2\frac{1}{2} = 37\frac{1}{2}$; $37\frac{1}{2} \div 7\frac{1}{2} = 5$;
 $5 + 1 = 6$, No. terms, *Ans.*
9. $\$500 \times .07 = \35 , com. diff.;
 $\frac{\$885 - \$500}{35} = 11$, No. years, *Ans.*

The number of years in the series is 1 more, 12.

10. $\frac{5 + 32 \times 12}{2} = 222$, *Ans.*
11. $\frac{1 + 12 \times 12}{2} = 78$, *Ans.*
12. $24 =$ first term; $1224 =$ last term; $52 =$ No. terms;
 $(\$224 + \$24) \times \frac{52}{2} = \32448 , *Ans.*

Art. 457.

1. $192 \div 2^6 = 3$, first term, *Ans.*
2. $6 \times 4^5 = 6144$, last term, *Ans.*
3. $512 \div 2 = 256$; $\sqrt[4]{256} = 4$, ratio, *Ans.*
4. $1458 \div 2 = 739$; $3^x = 739$; $x = 6$;
 $6 + 1 = 7$, No. terms, *Ans.*
5. $(384 \times 2 - 3) \div 1 = 765$, *Ans.*
6. $2 \times 3^{11} = 354294$, last term;
 $(354294 \times 3 - 2) \div 2 = 531440$; *Ans.* in cts. = \$5314.40.
7. $3 =$ first term; $3 =$ ratio; $7 =$ No. terms;
 $\$3 \times 3^6 = \2187 , *Ans.*

Art. 465.

2. $12.5 \times 6.75 \div 2 = 42.1875$; area, $42\frac{3}{16}$ sq. ft., *Ans.*
3. $25.01 \times 18.14 \div 2 = 226.84$;
area, 22 A. 6 ch. 13.45 P., *Ans.*
4. $\$60 \times (15.48 \times 9.67 \div 2 \div 10) = \449.07 , *Ans.*
5. $\$.40 \times \overline{35 \times 21 \div 2} = \147 , *Ans.*

Art. 466.

2. $20\frac{1}{4} \times 2 \div 2^7 = 1.5$; $1\frac{1}{2}$ feet, *Ans.*
3. $65 \times 2 \div 10 = 13$; 13 in., *Ans.*
4. $588 \times 2 \div 42 = 28$; 28 rods, *Ans.*
5. $6\frac{1}{2}$ A. $\times 160 \times 30\frac{1}{4} \times 2 \div 17 = 3701\frac{3}{17}$;
 $3701\frac{3}{17}$ yd. = 672 rd. $5\frac{3}{17}$ yd., *Ans.*
6. 5 A. 33 P. = 833 P.; 12.25 ch. = 49 rd.;
 $833 \times 2 \div 49 = 34$; 34 rd. = $8\frac{1}{2}$ ch., *Ans.*

Art. 467.

$$2. \frac{20+15+15}{2} = 25; 25-20 = 5; 25-15 = 10;$$

$$25-15 = 10; \sqrt{25 \times 5 \times 10 \times 10} = 111.8+;$$

111.8+ square feet, *Ans.*

$$3. \frac{25+36+49}{2} = 55; 55-25 = 30; 55-36 = 19;$$

$$55-49 = 6; \sqrt{55 \times 30 \times 19 \times 6} = 433.7;$$

433.7 sq. in. = 3 sq. ft. 1.7 sq. in., *Ans.*

$$4. \text{Half-sum} = 105; 105-70 = 35;$$

$$\sqrt{105 \times 35 \times 35 \times 35} \div 160 = 13.26; 13 \text{ A. } 41.76 \text{ P., } \textit{Ans.}$$

Art. 468.

$$2. 10.5 \text{ ft.} \times 8 = 84; \text{ area, } 84 \text{ sq. ft., } \textit{Ans.}$$

$$3. 8.75 \text{ ch.} \times 6 \div 10 = 5\frac{1}{4}; \text{ area, } 5\frac{1}{4} \text{ acres, } \textit{Ans.}$$

$$4. 198 \times 150 \div 160 = 185\frac{5}{8}; \text{ area, } 185\frac{5}{8} \text{ acres;} \\ \$32 \times 185\frac{5}{8} = \$5940, \textit{Ans.}$$

$$5. 1000 \times 100 = 100000 \text{ sq. l.}; 100000 \div 625 \div 160 = 1; \\ \text{area, } 1 \text{ acre, } \textit{Ans.}$$

$$6. \frac{18+25}{2} = 21\frac{1}{2} \text{ in., mean width;}$$

$$16 \times 21\frac{1}{2} \div 12 = 28\frac{2}{3} \text{ board ft., } \textit{Ans.}$$

Art. 469.

$$2. \overline{178+146} \div 2 \times 69 = 11178. \text{ area, } 11178 \text{ sq. ft., } \textit{Ans.}$$

$$3. (38+26 \div 2 \times 10) \div 160 = 2; \text{ area, } 2 \text{ acres, } \textit{Ans.}$$

Art. 470.

$$2. \frac{9 + 12\frac{1}{2}}{2} = 10\frac{3}{4}; 10.75 \times 35.5 = 381.625;$$

area, 381.625 sq. ft., *Ans.*

$$3. (20.453 + 50.832 \div 2 \times 80) \div 160 = 17.82\frac{1}{8};$$

area, 17.82 $\frac{1}{8}$ acres, *Ans.*

Art. 471.

$$3. 50 \text{ ft.} \div 3.1416 = 15.9 \text{ ft.} + = 15 \text{ ft. } 10.9 \text{ in.} +, \text{ } Ans.$$

$$4. 18.5 \text{ ft.} \div 3.1416 = 5.88 \text{ ft.} + = 5 \text{ ft. } 10.6 + \text{ in.}, \text{ } Ans.$$

$$5. 31.416 \text{ ft.} \div 3.1416 \div 2 = 5 \text{ ft.}, \text{ } Ans.$$

$$6. 14 \text{ in.} \times 2 \times 3.1416 = 87.96 \text{ in.} + = 7 \text{ ft. } 3.96 \text{ in.}, \text{ } Ans.$$

Art. 472.

$$4. 200 \text{ ch.} \times (200 \div 3.1416 \div 4) \div 10 = 318.3$$

area, 318.3 acres, *Ans.*

$$5. 480 \text{ rd.} \times (480 \div 3.1416 \div 4) \div 160 = 114.59;$$

area, 114.59 acres, *Ans.*

$$6. 84 \times (84 \div 3.1416 \div 4) \div 160 = 3.509;$$

area, 3.509 acres, *Ans.*

Art. 473.

$$3. 38.4846 \div .7854 = 7; \text{ diameter, } 7 \text{ rd.}, \text{ } Ans.$$

$$4. 78.75 \div .7854 = 10.01; \text{ diameter, } 10.01 \text{ yd.}, \text{ } Ans.$$

$$10.01 \text{ yd.} \times 3.1416 = 31.447 \text{ yd.}, \text{ circum.}, \text{ } Ans.$$

$$5. \sqrt{286.488 \div .7854} = 19.098; \text{ diam.}, 19.098 \text{ ft.}, \text{ } Ans.$$

$$19.098 \text{ ft.} \times 3.1416 = 59.998 \text{ ft.}, \text{ circum.}, \text{ } Ans.$$

Art. 479.

4. $6 \times 3.1416 \times 8 + (6^2 \times .7854 \times 2) = 207.3456;$
207.34 sq. ft., *Ans.*
5. $(4\frac{2}{3} + 4\frac{2}{3} + 3\frac{1}{4} + 3\frac{1}{4}) \times 8\frac{3}{4} + (4\frac{2}{3} \times 3\frac{1}{4} \times 2) = 168\frac{1}{8};$
168 $\frac{1}{8}$ sq. ft., *Ans.*
6. $(4 \times 2 \times 3.1416 \times 6.5) + (\overline{4 \times 2^2} \times .7854 \times 2) = 263.8944;$
263.8944 sq. ft., *Ans.*
7. $15 \times 18 + (\frac{1}{2} \text{ of } \sqrt{6^2 - 3^2} \times 6 \times 2) = 301.176;$
301.176 sq. ft., *Ans.*

Art. 480.

3. $1.5^2 \times .7854 \times 18 = 31.808 ;$ 31.808 cu. ft., *Ans.*
4. $6.5 \times 6.5 \times 6.5 = 274.625 ;$ 274 $\frac{1}{2}$ cu. ft., *Ans.*
5. $\$.30 \times 1.5 \times 1.5 \times 40 = \$27,$ *Ans.*
6. $7.9 \div 3.1416 = 2.5146,$ diameter;
 $2.5146 \div 4 \times 7.9 = 4.966,$ area ;
 $\$.45 \times 4.9722 \times 24 = \$53.63,$ *Ans.*

Art. 481.

3. $8.5 \times 4 \times 10.5 + 8.5 \times 8.5 = 429.25,$ sq. ft., *Ans.*
4. $6.75 \times 3.1416 \times 22.5 + (6.75^2 \times .7854) = 512.9 ;$
512.9 sq. ft., *Ans.*

Art. 482.

3. $2.5^2 \times .7854 \times 8 = 39.27$ cu. ft., *Ans.*
4. Area of base = 3.899 sq. ft. ;
 $(\$2.50 \times 3.897 \times 9) \div 3 = \$29.23,$ *Ans.*

5. $\sqrt{130^2 - (40^2 + 30^2)} = 120$, alt. of pyramid ;
 $\sqrt{120^2 + 40^2} = 126.49$, slant height of end ;
 $\sqrt{120^2 + 30^2} = 123.69$, “ “ side ;
 $80 \times 60 \times 120 \div 3 = 192000$; 192000 cu. ft., vol., *Ans.*

$$\begin{array}{rcl} \overline{60 + 60} \times 126.49 \div 2 & = & 7589.4, \text{ surface of ends ;} \\ \overline{80 + 80} \times 123.69 \div 2 & = & 9895.2, \quad \text{“ sides ;} \\ 80 \times 60 & = & 4800, \quad \text{“ base ;} \\ & & \hline & & 22284.6 ; \\ & & 22284.6 \text{ sq. ft., surface, } \textit{Ans.} \end{array}$$

Art. 483.

3. $(8 \times 7 + 4 \times 7) \times 27.5 \div 9 = 256\frac{2}{3}$; $256\frac{2}{3}$ sq. yd., *Ans.*

Art. 484.

(2.)

$$[(4^2 \times .7854) + (3^2 \times .7854) + \sqrt{(4^2 \times .7854) \times (3^2 \times .7854)}] \times 2 = 58.1196 ;$$

58.1196 cubic feet, *Ans.*

3. $(1.25 \times 1.25 + 1 \times 1 + \sqrt{1.25^2 \times 1^2}) \times 10 = 38.125$;
 38.125 cubic feet, *Ans.*

4. $5 \text{ ft.} \div 3.1416 = 1.5915 \text{ ft.}$, diameter of lower base ;
 $3 \text{ ft.} \div 3.1416 = .95492 \text{ ft.}$, “ upper “
 $1.5915 \times 5 \div 4 = 1.989375$, area of lower base in sq. ft. ;
 $.95492 \times 3 \div 4 = .71619$, “ upper “ “
 $(1.989375 + .71619 + (1.989375 \times .71619)) \times 50 \div 3 =$
 51.3837 ; 51.3837 cu. ft., *Ans.*

Art. 485.

2. $3 \text{ ft.} \times 3.1416 \times 9.4248 \text{ feet, circumference;}$
 $9.4248 \times 3 = 28.2744; 28.2744 \text{ sq. ft., } Ans.$
3. $2 \text{ ft.} \times 3.1416 = 6.2832 \text{ ft., circumference;}$
 $6.2832 \times 2 = 12.5664; 12.5664 \text{ square feet, } Ans.$

Art. 486.

2. $30 \times 30 \times 3.1416 \times \overline{30 \div 6} = 14137.2; 14137.2 \text{ cu. ft.}$
3. $10 \times 10 \times 3.1416 \times \overline{10 \div 6} = 523.6; 523.6 \text{ cu. yd., } Ans.$

Art. 487.

2. $21 + (\overline{30 - 21} \times \frac{2}{3}) = 27;$
 $27^2 \times 40 \times .0034 = 99.144, \text{ No. gal., } Ans.$
3. $26 + (\overline{31 - 26} \times .6) = 29;$
 $29^2 \times 42 \times .0034 = 120.0948, \text{ No. gal., } Ans.$

Art. 505.

5. $7.6 \text{ m.} + 36.07 \text{ m.} + 125.8 \text{ m.} + 9.127 \text{ m.} = 178.597 \text{ m.,}$
Ans.
6. $47.5 \text{ m.} + 32.41 \text{ m.} + .725 \text{ m.} = 80.635 \text{ m., } Ans.$
7. $.05607 \text{ Km.} + .10582 \text{ Km.} + 4.30765 \text{ Km.} + 6.03458 \text{ Km.}$
 $= 10.50412 \text{ Km., } Ans.$
8. $8.125 \text{ Km.} - 3.2764 \text{ Km.} = 4.8486 \text{ Km., } Ans.$
9. $40 \text{ cm.} \times 32 = 1280 \text{ cm., or } 12.80 \text{ m., } Ans.$
10. $\$.15 \times 12.80 = \$1.92, Ans.$
11. $25.3 \text{ Km.} - .43525 \text{ Km.} = 24.87475 \text{ Km., } Ans.$

$$12. 36.8 \text{ Km.} \times 4 = 147.2 \text{ Km., } Ans.$$

$$13. 15 \text{ sq. Hm.} \times \overline{100 \times 100} = 150,000 \text{ sq. m., } Ans.$$

$$14. 12 \text{ m.} \times 7 \text{ m.} = 84 \text{ sq. m., } Ans.$$

$$15. 4 \text{ Ha.} \times 8 = 32 \text{ Ha.; } 9 \text{ a.} \times 7 = 63 \text{ a.; } 14 \text{ ca.} \times 12 \\ = 168 \text{ ca.}$$

$$320000 \text{ ca.} + 6300 \text{ ca.} + 168 \text{ ca.} = 326468 \text{ ca., } Ans.$$

$$16. 42 \text{ Dm.} \times 36 \text{ Dm.} = 1512 \text{ sq. Dm., } Ans.$$

$$17. 8 \text{ m.} \times 5.4 \text{ m.} = 43.2 \text{ sq. m.; } 43.2 \text{ sq. m.} \div .6 \text{ m.} \\ = 72 \text{ m., } Ans.$$

$$18. 36 \text{ cu. m.} - \overline{42 \text{ cu. dm.} \times 8} = 36 \text{ cu. m.} - .336 \text{ cu. m.} \\ = 35.664 \text{ cu. m., } Ans.$$

$$19. 16 \text{ m.} \times 3 \text{ m.} \times .8 \text{ m.} = 38.4 \text{ cu. m., } Ans.$$

$$20. 16.5 \text{ m.} \times 8.2 \text{ m.} \times 3.2 \text{ m.} = 432.96 \text{ cu. m., } Ans.$$

$$21. 9.3 \text{ m.} \times 2.8 \text{ m.} \times 1.5 \text{ m.} = 39.06 \text{ cu. m., or sters;} \\ \$2.75 \times 39.06 = \$107.415, \text{ } Ans.$$

$$22. 175 \text{ l.} + 2500 \text{ l.} + .42 \text{ l.} + 1.6 \text{ l.} = 2677.02 \text{ l., } Ans.$$

$$23. \overline{.25 \text{ Hl.} \times 6} - \overline{36 \text{ l.} \times 15} = 15000 \text{ l.} - 540 \text{ l.} = 14460 \text{ l.,} \\ Ans.$$

$$24. 5 \text{ Hl.} = 500 \text{ l.; } 500 \text{ l.} \div 25 = 20 \text{ l., } Ans.$$

$$25. 2 \text{ Hl.} = 200 \text{ l.; } 200 \text{ l.} - 125 \text{ l.} = 75 \text{ l., } Ans.$$

$$26. 3 \text{ m.} \times 2 \text{ m.} \times 1.5 \text{ m.} = 9 \text{ cu. m., or 90 Hl., } Ans.$$

$$27. 16.5 \text{ T.} \times \overline{10 \times 100} = 16500 \text{ Kl.;} \\ 16500 \text{ Kl.} \times \overline{10 \times 10 \times 10} = 16500000 \text{ g.;} \\ 16500000 \text{ g.} \times 10 = 165000000 \text{ dg., } Ans.$$

$$28. 5 \text{ q.} = 500 \text{ Kg.; } \$.80 \times 500 = \$400, \text{ } Ans.$$

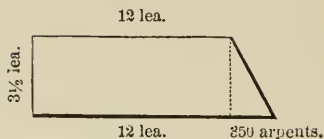
Art. 508.

1. $24.5 \text{ m.} \div .3048 \text{ m.} = 80.38 + \text{ft.};$
 $4.72 \text{ m.} \div .3048 \text{ m.} = 15.48 \text{ ft., Ans.}$
2. $6000 \text{ m.} = 6 \text{ Km.}; 6214 \text{ mi.} \times 6 = 3.728 \text{ mi., Ans.}$
 $.6214 \text{ mi.} \times 400 = 248.56 \text{ mi., Ans.}$
3. $.9144 \text{ m.} \times 75 = 68.58 \text{ m., Ans.}$
 $.9144 \text{ m.} \times 18.5 = 16.91 + \text{m., Ans.}$
4. $436 \text{ a.} \div 40.47 = 10.773 \text{ A.} = 1723.68 \text{ sq. rd., Ans.}$
5. $.8361 \text{ sq. m.} \times 3588 = 2999.9268 \text{ sq. m.}$
 $= 29.999 + \text{a., Ans.}$
6. $3.785 \text{ l.} \times 13.96875 = 52.87 + \text{l.} = .5287 + \text{Hl., Ans.}$
7. $373.24 \text{ g.} \times 6 = 2239.44 \text{ g.};$
 $453.6 \text{ g.} \times 6 = 2721.6 \text{ g., Ans.}$
8. $18.5 \text{ ft.} \times 14 = 259 \text{ sq. ft. in ceiling};$
 $37 \text{ ft.} + 28 \text{ ft.} \times 9.5 = 617.5 \text{ sq. ft. in walls};$
 $617.5 \text{ sq. ft.} + 259 \text{ sq. ft.} = 876.5 \text{ sq. ft.};$
 $.0929 \text{ sq. m.} \times 876.5 = 81.42685 \text{ sq. m., Ans.}$
9. $\$3 \times 454 = \$1362, \text{ cost of wheat};$
 $.35243 \text{ Hl.} \times 454 = 160.003 + \text{Hl., Ans.}$
 $\$8.75 \times 160.003 - \$1362 = \$38.08, \text{ gain, Ans.}$
10. $.4536 \text{ Kg.} \times 196 = 88.9056 \text{ Kg., Ans.}$
11. $10.5\text{-m.} \times 8.4 \div .84 = 105 \text{ m.};$
 $\$2.75 \times 105 = \$288.75, \text{ Ans.}$
12. $75 \text{ m.} \times 62 \div 100 = 46.5 \text{ a.}; \$40 \times 46.5 = \$1860, \text{ Ans.}$
13. $15.7 \text{ m.} \times 3 \times 7.52 = 354.192 \text{ cu. m. or sters};$
 $\$1.50 \times 354.192 = \$531.288, \text{ Ans.}$
14. $\$1.20 \times 250 = \$300; \$300 \div \$.18 = 1666\frac{2}{3};$
 $1666\frac{2}{3} \text{ m., Ans.}$
15. $40.5 \text{ m.} \div .9144 = 44.29 \text{ yd.};$
 $\$4.75 \times 44.29 = \$210.38, \text{ Ans.}$

16. $8.5 \text{ m.} \times 5.8 \times 4.2 = 207.06 \text{ cu. m. or sters};$
 $207.06 \div 3.624 = 57.135; 57.135 \text{ cd.};$
 $\$3.25 \times 57.135 = \$185.69, \text{ Ans.}$
17. $2.837 \text{ bu.} \times 540 = 1531.98 \text{ bu.};$
 $\$2 \times 1531.98 \div \$7 = 437.7 +; 437.7 \text{ tons, Ans.}$
18. $18.3 \text{ m.} \times 10.73 \times 3.4 = 667.6206 \text{ cu. m. or sters};$
 $\$.20 \times 667.6206 = \$133.52, \text{ Ans.}$
19. $2.837 \text{ bu.} \times 40 = 113.48 \text{ bu.};$
 $113.48 \text{ bu.} \div 2.471 = 45.92 \text{ bu., Ans.}$
20. $5.5 \text{ ft.} \times 4.5 \times 4 = 99 \text{ cu. ft.}; 1 \text{ cu. ft.} = 28.317 \text{ cu. dm. or l.};$
 $28.317 \text{ cu. dm.} \times 99 = 2803.38 \text{ cu. dm. or liters, Ans.}$
21. $8 \text{ Dl.} \times 60 = 480 \text{ Dl.} = 48 \text{ Hl.};$
 $75 \text{ K.} \times 48 = 3600 \text{ K.} = 36 \text{ Q.} = 3.6 \text{ metric tons, Ans.}$

Art. 509.

1. 17 arpents 11 toises 4 ft. 8 lines $= 3334\frac{1}{8} \text{ ft.,}$
width in Fr. feet;
 $184 \text{ arpents } 22 \text{ toises } 3 \text{ ft.} = 35463 \text{ ft., length in Fr. feet};$
 $35463 \text{ ft.} \times 3334\frac{1}{8} = 118235612\frac{1}{8} \text{ sq. ft., area in sq. ft.};$
 $1 \text{ sq. toise} = 36 \text{ sq. ft.}; 1 \text{ sq. arpent} = 1024 \text{ sq. toises};$
 $118235612\frac{1}{8} \div 36 \text{ sq. ft.} = 3284322 \text{ sq. T. } 20\frac{1}{8} \text{ sq. ft.};$
 $3284322 \text{ sq. T.} \div 1024 = 3207 \text{ sq. arpents } 354 \text{ sq. toises};$
 $3207 \text{ sq. arpents } 354 \text{ sq. toises } 20 \text{ sq. ft. } 24 \text{ sq. in., French}$
measure, Ans.
 $35463 \text{ Fr. ft.} \times 12.79 = 453571.77 \text{ Eng. in.};$
 $453571.77 \text{ in.} \div 12 = 37797.64 \text{ Eng. ft.};$
 $3334\frac{1}{8} \text{ Fr. ft.} \times 12.79 = 42642.57 \text{ Eng. in.};$
 $42642.57 \text{ in.} \div 12 = 3553.54 \text{ Eng. ft.};$
 $37797.64 \text{ ft.} \times 3553.54 = 134315425.6456 \text{ Eng. sq. ft.};$
 $134315425.6456 \div 9 \div 30\frac{1}{4} \div 160$
 $= 3083 \text{ A. } 73 \text{ P. } 7.93 + \text{sq. yd., Am. meas., Ans.}$

Art. 510.

- 1 $12 \text{ lea.} \times 3.5 = 42 \text{ sq. lea. in parallelogram ;}$
 $3.5 \text{ lea.} \times 5000 \times 350 = 6125000 \text{ sq. varas ;}$
 $6125000 \text{ sq. varas} \div 2 = 3062500 \text{ sq. varas in triangle ;}$
 $3062500 \text{ sq. varas} \div 25000000 \text{ sq. varas} = .1225 \text{ sq. lea. ;}$
 $.1225 \text{ sq. lea.} \times 25 = 3.0625 \text{ sq. labors ;}$
 $.0625 \text{ sq. l.} \times 1000000 = 62500 \text{ sq. varas ;}$
hence, $42 \text{ sq. lea. 3 labors } 62500 \text{ sq. varas} = \text{area, Span-}$
ish measure, *Ans.*

- $42.1225 \text{ sq. lea.} \times 4428.4 = 186535.279 \text{ A.} = \text{area, Eng.}$
measure ;
- $.279 \text{ A.} = 44 \text{ P. } 19 \text{ sq. yd. } 3 \text{ sq. ft. } 34.56 \text{ sq. in. ;}$
 $186535 \text{ A.} \div 640 = 291 \text{ sq. mi. } 295 \text{ A. ; hence,}$
 $291 \text{ sq. mi. } 295 \text{ A. } 44 \text{ P. } 19 \text{ sq. yd. } 3 \text{ sq. ft. } 34.56 \text{ sq. in.}$
 $= \text{area Am. measure, } Ans.$

Art. 511.

1. $(\$339.625 - \$78.375) \div 209 = \$1.25, Ans.$
2. $\$22.75 \times 3.86 = \$87.815, Ans.$
3. $(\$.75 \times 28.5 + \$1.50 \times 4.53) \div (12.52 \div 2) = \$4.50.$
4. $\$4.625 + (\$453.75 \div 27.5) = \$21.125, Ans.$

5. £6 10s. 10d. = 1570d.;

$$$.02\frac{1}{60} \times 1570 = \$31.66 +, \text{ Ans.}$$

6. 9 lb. 10 oz. = 154 oz.; 154 oz. \times 437.5 = 67375 gr.;

$$67375 \text{ gr.} \div 480 \text{ gr.} = 11 \text{ lb. } 8 \text{ oz. } 7 \text{ pwt. } 7 \text{ gr., Ans.}$$

7. $\frac{11}{8}$ A. $\times \frac{3}{8} = 1\frac{3}{8}$ A.; $\frac{3}{8}$ A. $\times \frac{20}{11} = 60$ P.;

$$1 \text{ A. } 60 \text{ P., Ans.}$$

8. 1 lb. 10 $\bar{5}$ = 22 $\bar{5}$ = 10560 gr. = 1056 doses;

$$$.25 \times 22 = \$49.50; $.12\frac{1}{2} \times 1056 = \$132;$$

$$$.132 - \$49.50 = \$82.50, \text{ Ans.}$$

9. 4 bales 4 bundles 1 ream 10 quires = 990 quires;

$$24 \div 8 = 3 \text{ vol. per quire}; 990 \times 3 = 2970 \text{ vol., Ans.}$$

10. $\$.75 \times 10 = \37.50 ; 10 bu. = 640 pt.;

$$$.06\frac{1}{4} \times 640 = \$40.00; \$40 - \$37.50 = \$2.50, \text{ Ans.}$$

11. 1886 yr. 1 mo. 1 da. 4 h. 55 min. 24 sec.

1888 “ 4 “ 21 “ 12 “ 40 “ 25 “

$$1 \text{ yr. } 8 \text{ mo. } 9 \text{ da. } 16 \text{ h. } 14 \text{ min. } 59 \text{ sec.}$$

As the full year is a common year, and the full months

commence with May, the 1 yr. 8 mo. 9 da. = 365 da.

+ 31 da. + 30 da. + 31 da. + 31 da. + 30 da. + 31 da.

+ 30 da. + 31 da. + 9 da. = 619 da.; hence, 619 da. 16 h.

14 min. 59 sec., *Ans.*

13. $58 \times 37 \times 6 = 12876$ cu. ft. = 476 cu. yd. 24 cu. ft.;

$$476 \text{ cu. yd. } 24 \text{ cu. ft.}$$

$$471 \text{ “ } 16 \text{ “ } 972 \text{ cu. in.}$$

$$\text{Ans. } 5 \text{ cu. yd. } 7 \text{ cu. ft. } 756 \text{ cu. in.}$$

14. $118^\circ + 120^\circ = 238^\circ$, diff. in lon. reckoned west from Pekin;

$$360^\circ - 238^\circ = 122^\circ, \text{ “ “ “ “ “ Sacramento;}$$

$$238^\circ \div 15 = 15 \text{ h. } 52 \text{ min., Sacramento earlier than Pekin; or}$$

$$122^\circ \div 15 = 8 \text{ h. } 8 \text{ min. “ later “ “}$$

15. $35^{\circ} 32' + 76^{\circ} 37' = 112^{\circ} 9'$, diff. in lon.;
 $112^{\circ} 9' \div 15 = 7$ h. 28 min. 36 sec., diff. in time;
 6 h. 40 min. A. M. + 7 h. 28 min. 36 sec.
 $= 2$ h. 8 min. 36 sec. P. M., *Ans.*

16. $\$4.75 \times 7.640 = \36.29
 $\$2.75 \times 267.89 = 736.6975$
 $20 \times .986 = 19.72$
 $.35 \times 23.463 = \underline{8.212 +}$
 $\$800.919 +$, *Ans.*

17. $32 \times 24 \times 6 = 4608$ cu. ft. $= 170\frac{2}{3}$ cu. yd.;
 $\$.20 \times 170\frac{2}{3} = \$34.13 +$, *Ans.*

18. $(32 \text{ ft.} + 24 \text{ ft.}) \times 2 = 112 \text{ ft.}$, mason's girt;
 $112 \times 6 \times 1\frac{1}{2} = 1008$ cu. ft. $= 40\frac{8}{11}$ Pch.;
 $\$1.25 \times 40\frac{8}{11} = \$50.90\frac{1}{11}$, *Ans.*

19. $105.85 \text{ ch.} \times 40.15 \text{ ch.} = 4249.8775$ sq. ch.
 $= 424.98775$ A., *Ans.*

20. $41 \times 40 \times \frac{1}{100} = 16.40$ squares in both sides;
 $\$3.40 \times 16.40 = \55.76 , *Ans.*

21. $189.5 \times 150 = 28425$ sq. rd. $= 177.65625$ A.;
 $\$31.75 \times 177.65625 = \$5640.58 +$, *Ans.*

22. $128 \div (3\frac{1}{2} \times 12) = 3\frac{1}{21}$ ft. high, *Ans.*

23. $\$1.375 \times (7 \text{ ft.} \times 6 \times 5 - \frac{1}{5}) \times \frac{3}{4} = \173.25 , *Ans.*

24. $\$7 \times 2.40 = \16.80
 $5.40 \times .865 = 4.671$
 $.80 \times 12.56 = \underline{10.048}$
 $\$31.519$, *Ans.*

25. $\$1728 \div 2 = \864 1st half sold for;
 $144 \times 8 = \underline{1152}$ 2d " " "
 $\$2016$, *Ans.*

$$26. \frac{\$32.3}{1} \times \frac{4}{19} \times \frac{15}{2} = \$51, \text{ Ans.}$$

$$27. \$5.635 \div .875 = \$6.44; \$6.44 \times 9\frac{1}{4} = \$59.57, \text{ Ans.}$$

$$28. \$1.25 \times 120 = \$15.00 \quad \$1.50$$

$$.625 \times 18 = 11.25 \quad 1.27$$

$$.07 \times 47 = 3.29 \quad 1.87$$

$$.18 \times 6 = 1.08 \quad 2.30$$

$$\$30.62 - \$6.94 = \$23.68, \text{ Ans.}$$

$$29. \frac{3}{32} = .09375; .62\frac{1}{2} = .625; .37\frac{1}{16} = .370625; \frac{3}{8} = .375;$$

$$.09375 + .625 + .370625 + .375 = 1.464375, \text{ Ans.}$$

$$30. \frac{11\frac{1}{2} + 8}{12} = \frac{19}{8}; \frac{19}{8} - \frac{1}{2} = \frac{17}{8}, \text{ increased, Ans.}$$

$$31. \frac{10\frac{1}{4} + 8}{7} = \frac{18}{7}; \frac{10}{7} - \frac{18}{7} = -\frac{8}{7}, \text{ diminished, Ans.}$$

$$32. \text{A, B, and C do } \frac{1}{6} \text{ in 1 day; B and C, } \frac{1}{8}; \text{ hence,}$$

$$\text{A does } \frac{1}{6} - \frac{1}{8} = \frac{1}{24}, \text{ in 1 day;}$$

$$\text{and, } 1 \div \frac{1}{24} = 24 \text{ days, Ans.}$$

$$33. \$\frac{1}{2} \times \frac{5}{8} \times \frac{5}{3} = 9\frac{5}{8} \text{ bushels, Ans.}$$

$$34. \frac{30\frac{5}{7} - 1}{4} = \frac{817}{1628}, \text{ Ans.}$$

$$35. (\$125 - \$3.25 \times 12.5) \div \$1.625 = 135 \text{ lb., Ans.}$$

$$36. (\$2.25 \times 2400) - (\$15.90 \times 240) = \$1584, \text{ Ans.}$$

$$37. (\$6.375 \times 150) + (\$1.44 \times 350) = \$1460.25 \text{ cost;}$$

$$(\$8.25 \times 105 + \$2.06 \times 350) - \$1460.25 = \$127, \text{ partial}$$

$$\text{gain;}$$

$$(\$363.25 - \$127) \div (150 - 105) = \$5.25 \text{ per bbl., Ans.}$$

$$38. 6.562 + 1.134 \div 3.702 = 2.07887, \text{ Ans.}$$

$$39. \$469.464 \times .03715 \times 100 = \$1744.0598, \text{ Ans.}$$

$$40. \$4396.40 \div \$10.47 - \$125 = \$295, \text{ Ans.}$$

$$41. \frac{3}{4} \text{ mi.} \times 4 = 3 \text{ mi.; } 3 \text{ mi.} \times 320 = 960 \text{ rd., Ans.}$$

$$42. \quad 2 \text{ cwt. } 10 \text{ lb.} = 210 \text{ lb.}; 3 \text{ bbl.} \times 210 = 630 \text{ lb.}; \\ 630 \text{ half-oz.} = 19.6875 \text{ lb.}; 19.687 \text{ half-oz.} = .615 \text{ lb.} \\ .12\frac{1}{2} \times (19.687 + .615) = \$2.54.$$

$$43. \quad £10.925 \times 4.8665 = \$53.1665 +, \text{ Ans.}$$

$$44. \quad ($.125 \times 5000) - \$425.75 = \$199.25, \text{ Ans.}$$

$$45. \quad 580 \text{ fr.} \times .193 = \$111.94. \text{ Ans.}$$

$$46. \quad \$291.99 \div \$4.8665 = £60, \text{ Ans.}$$

$$47. \quad \begin{array}{ll} 60 \text{ ft. } 6' \times 2 \times 22 & = 2662 \text{ ft., sides;} \\ 40 \text{ ft. } 3' \times 2 \times 22 & = 1771 \text{ ft., ends;} \\ 60 \text{ ft. } 6' \times 24 \text{ ft. } 2' \times 2 & = 2924 \text{ ft. } 2', \text{ roof;} \\ & \quad 523 \text{ ft. } 3', \text{ gables;} \\ & \hline & 7880 \text{ ft. } 5', \text{ Ans.} \end{array}$$

$$48. \quad \begin{array}{l} \text{Each picket and space occupies } \frac{1}{2} \text{ ft.}; 2 \text{ to a foot;} \\ 6 \text{ rd. by } 14 \text{ rd. requires } 40 \text{ rd. of fence} = 660 \text{ ft.;} \\ 2 \text{ pickets} \times 660 = 1320 \text{ pickets;} \\ \$2.75 \times 13.20 = \$36.30, \text{ Ans.} \end{array}$$

$$49. \quad \$1500 \div 1800 = $.83\frac{1}{3}, \text{ Ans.}$$

$$50. \quad 15\frac{3}{4} \text{ ch.} \times 12\frac{1}{2} \text{ ch.} \div 10 \text{ sq. ch.} = 19.6875 \text{ A.}; \\ \$64 \times 19.6875 = \$1260, \text{ Ans.}$$

$$51. \quad \text{Distance around field } 168 \text{ rd.} = 2772 \text{ ft.} \div 12 \times 5 = \\ 1155 \text{ boards, Ans.}$$

$$52. \quad \begin{array}{l} \text{The walk on each of } 2 \text{ sides will be } 300 \text{ ft. long;} \\ \text{on the other } 2 \text{ sides it will be } 300 \text{ ft.} - 8 \text{ ft.} = 292 \text{ ft.;} \\ (300 \text{ ft.} + 300 \text{ ft.} + 292 \text{ ft.} + 292 \text{ ft.}) \times 4 \div 9 = 526\frac{2}{3} \text{ square} \\ \text{yards, Ans.} \end{array}$$

53. $(16 \text{ ft.} \times 10 \times 124) \div 12 = 1653\frac{1}{3} \text{ board ft.};$
 $(14 \text{ ft.} \times 16 \times 120) \div 12 = 2240 \text{ board ft.};$
 $(15 \text{ ft.} \times 12 \times 2.5 \times 40) \div 12 = 1500 \text{ board ft.};$
 $(18 \text{ ft.} \times 10 \times 3 \times 96) \div 12 = 4320 \text{ board ft.};$
 $(12 \text{ ft.} \times 4 \times 3 \times 60) \div 12 = 720 \text{ board ft.};$
 $\$15 \times 1.653\frac{1}{3} = \$24.80; \$16.50 \times 2.24 = \$36.96;$
 $\$18.75 \times 1.5 = \$28.125; \$14 \times 4.32 = \$60.48;$
 $\$12.50 \times .72 = \$9;$
 $\$24.80 + \$36.96 + \$28.125 + \$60.48 + \$9 = \$159.365, \text{ Ans.}$

54. $200 \text{ ft. by } 30 \text{ ft. by } 5 \text{ ft. } 4 \text{ in.} = 32000 \text{ cu. ft.} = 250 \text{ cords};$
 $\$5 \times 250 = \$1250, \text{ Ans.}$

55.

x	950
72	8
10	5
200	24
6	9
2	12
	57 \text{ men, } \text{Ans.}

56. $\$10050 \times .33\frac{1}{3} - \$1750 = \$1600, \text{ Ans.}$

57. $2 \text{ T. } 14\frac{1}{2} \text{ cwt.} = 2.725 \text{ T. @ } \$240 = \$654, \text{ cost};$
 $2 \text{ T. } 14\frac{1}{2} \text{ cwt.} = 5450 \text{ lb. @ } 16\phi = \$872;$
 $\$872 - \$654 \div \$654 = .33\frac{1}{3} = 33\frac{1}{3}\%, \text{ Ans.}$

58. $\$58760 - \$40010 \div \$250000 = .075 = 7\frac{1}{2}\%, \text{ Ans.}$

59.

x	12
3	45
360	636 ⁵³
3	53
	17 $\frac{2}{3}$ da., \text{Ans.}

60. $\$.80 \text{ per gallon} = \$.10 \text{ per pint};$
 $\$.12 - \$.10 \div \$.10 = .20 = 20\%, \text{ Ans.}$

61. $\$32 \times 160 + \$200 + \$150 + \$18 \times 1.25 \div 160 = \42.875 , *Ans.*
62. $\$24956.16 \div .97 = \25728 , amt. to be raised ;
 $\$1.50 \times 520 = \frac{780}{\$24948}$, “ “ on polls ;
 “ “ “ property ;
 $\$24948 \div \$756000 = .033 = 3\frac{3}{10}\%$, rate of tax ;
 $\$15420 \times .033 + \$3 = \$511.86$, Norton's tax, *Ans.*
63. $\$750 \times .06 = \45 ; $\$942 - \$750 = \$192$;
 $\$192 \div \$45 = 4\frac{4}{5}$ yr. = 4 yr. 3 mo. 6 da., *Ans.*
64. $44 \times \frac{1}{2}$ of $18 \times 2 = 792$, No. of sq. ft., *Ans.*
65. $\$11536 \div 1.03 = \11200 , amt. distributed ;
 $\$11200 \div \16000 (total indebtedness) = $.70 = 70\%$ paid ;
 $\$4000 \times .70 = \2800 , A's share.)
 $\$5000 \times .70 = \3500 , B's “ } *Ans.*
 $\$7000 \times .70 = \4900 , C's “ }
66. $.05 + .05 = .10$, annual rate of dividend ;
 $\$28000 \times .10 = \2800 , dividend ;
 $\$2800 + \$2950 = \$5750$, *Ans.*
67. $1.08\frac{3}{4} + .00\frac{1}{4} = 1.09$;
 $\$125 \times 109 = \13625 ;
 $\$13625 \div 1.09 = \12500 , stock purchased ;
 $\$12500 \times .06 = \750 , income from stock ;
 $\$750 - \$681.25 = \$68.75$, income increased, *Ans.*
68. $25 \text{ A.} = 4000 \text{ sq. rd.}$;
 $\sqrt{4000} = 63.245 + \text{rd.}$, one side of the square field ;
 $63.245 \text{ rd.} \times 4 = 252.980 \text{ rd.}$, perimeter of the square field ;
 $4000 \div 2 = 2000$;
 $\sqrt{2000} = 44.721 \text{ rd.}$, width of the rectangle ;
 $44.721 \text{ rd.} \times 2 = 89.442 \text{ rd.}$, length of the rectangle ;
 $(44.721 \text{ rd.} + 89.442 \text{ rd.}) \times 2 = 268.326 \text{ rd.}$, perimeter of the rectangle ;

268.326 rd. — 252.980 rd. = 15.346 rd., difference of the perimeters;

$$$.625 \times 15.346 = $.959+, Ans.$$

69. $$.12 \times 15 = $.180;$

$$$.180 - $.180 \times .25 = $.135;$$

$$$.135 - $.135 \times .10 = $.121.50, B's net price;$$

$$$.180 - $.180 \times .20 = $.144;$$

$$$.144 - $.144 \times .10 = $.129.60;$$

$$$.129.60 - $.129.60 \times .05 = $.123.12, H's net price;$$

$$$.123.12 - $.121.50 = $.162 gain, Ans.$$

70. $$.1.50 \times 1.33\frac{1}{3} = $.2; $$.24 \times 1.33\frac{1}{3} = $.3;$$

$$$.7.20 \times 1.33\frac{1}{3} = $.9.60, etc., Ans.$$

71. $$.840 \div .06 \times 1.02\frac{1}{2} = $.14350, Ans.$

72. $.06 \div .90 = .06\frac{2}{3} = 6\frac{2}{3}\%$, Ans.

73. $(32 \text{ in.} \times 24 \times 15) \div (8 \text{ in.} \times 6 \times 3) = 80 \text{ cans, Ans.}$

74. $(6.5 \text{ ft.} \times 4 \times 3.5 \times 1728) \div 231 \text{ cu. in.} = 680\frac{8}{11} \text{ gal.};$

$$62\frac{1}{2} \text{ lb.} \times 91 = 5687\frac{1}{2} \text{ pounds, Ans.}$$

75. $$.3500 \div 1.0175 = $.3439.803+, pres. worth of 1st install.$

$$$.3500 \div 1.02\frac{1}{3} = $.3420.195+, \quad \quad \quad \text{“} \quad \quad \text{“} \quad \text{2d} \quad \text{“}$$

$$$.3500 \div 1.04\frac{2}{3} = $.3343.949+, \quad \quad \quad \text{“} \quad \quad \text{“} \quad \text{3d} \quad \text{“}$$

$$\overline{$.10203.947+}, Ans.$$

76. $$.500 \times 30 = $.15000$

$$400 \times 60 = 24000 \quad 93000 \div 1500 = 62 \text{ da., term of credit;}$$

$$600 \times 90 = 54000 \quad \text{Jan. 1} + 62 \text{ da.} =$$

$$\overline{$.1500} \quad \quad \overline{$.93000} \quad \quad \text{Mar. 3, 1880, equated time.}$$

77. $.95\frac{1}{2} + .00\frac{1}{2} = .96; 1.12 + .00\frac{1}{2} = 1.12\frac{1}{2};$

$$$.48000 \div 2 = $.24000, invested in each kind of stock;$$

$$$.24000 \div .96 = $.25000, purchased of 5% stock;$$

$$$.24000 \div 1.12\frac{1}{2} = $.21333.33\frac{1}{3}, purchased of 6% stock;$$

$$$.25000 \times .05 = $.1250, income from the 5's;$$

$$$.21333.33\frac{1}{3} \times .06 = $.1280, income from the 6's;$$

$$$.1250 + $.1280 = $.2530, Ans.$$

78. $\$12300 \div 1.025 \div \$5 = 2400 \text{ bbl.}, \text{ Ans.}$

79. $\$1275 \div .9895 = \$1288.53, \text{ Ans.}$

80. 8 men : x :: 8 days : 32 days; $x = 32$ men;
32 men — 8 men = 24 men, *Ans.*

81. $\$25000 \div .76 = \$32894.73 +, \text{ Ans.}$

82. $\$.80 \times 1.20 = \$.96$, what it must sell for; and since the selling price is $100\% - 10\% = 90\%$ of the asking price, we have $\$.96 \div .90 = \$1.06\frac{2}{3}, \text{ Ans.}$

83. Due Sept. $\frac{2}{5}$; term of discount, 148 da.;
 $\$575.63 \times .06 \times \frac{148}{360} = \14.198 , bank discount;
 $\$575.63 - \$14.198 = \$561.43$, proceeds, *Ans.*

84. $\sqrt{25^2 + 20^2 + 15^2} = 35.35 \text{ ft.}, \text{ Ans.}$

85. $\sqrt{20^2 + 15^2} = 25$; 25 ft., *Ans.*

86. $\sqrt{25^2 + 15^2} = 29.15 +$; 29.15 ft., *Ans.*

87. Their shares are as 1, $1\frac{1}{2}$, $2\frac{1}{4}$; $1 + 1\frac{1}{2} + 2\frac{1}{4} = 4\frac{3}{4}$.

$$\left. \begin{array}{l} 4\frac{3}{4} : 1500 :: 1 : x; \quad x = \$315.79 \\ 4\frac{3}{4} : 1500 :: 1\frac{1}{2} : x; \quad x = \$473.69 \\ 4\frac{3}{4} : 1500 :: 2\frac{1}{4} : x; \quad x = \$710.52 \end{array} \right\} \text{ Ans.}$$

88. March 1, \$500;

June 1, \$800;

Aug. 1, \$600. Equated time, May 27.

\$1000 paid Apr. 1, 56 da. before it is due, will allow the keeping of the balance, \$900, 62 da. after it is due.

May 27 + 62 da. = July 28. \$900, July 28, *Ans.*

89. $\$10302.18 \div \$10640 = .96825$, cost of exchange.

Int. for 63 da. = .0105

$\$97875$, course of exchange, *Ans.*

90. $\$.19 \times 488 \times 420 = \38942 , cost.

$\$42122.23 - \$38942 \div 1.06 = \$5384.12$, *Ans.*

(91.)

YR. MO. DA.		DIFF. BETWEEN DATES.		PAYMENTS.	PRINCIPAL.
1883	1 15	yr. mo. da.	yr. mo. da.		\$800
1884	4 18	1 3 3	9 3	\$100	\$742.466
1886	1 1	1 8 13	4 2 27	\$70	\$830.415,
1887	6 15	1 5 14		\$62.50	
1888	7 15	1 1 0			<i>Ans.</i>

The difference between the first two dates, less 6 mo., is 9 mo. 3 da.

At the time each of the last two payments is made, the interest due exceeds the payment made.

92. $\$2 \times 240 = \480 , cost;

$\$1.95 \times (39.37079 \text{ in.} \times 240 \div 36 \text{ in.}) = \511.81 ;

$\$511.81 - \$480 = \$31.81$, *Ans.*

93. $\$3 \times 800 = \2400 , cost;

$800 \text{ bu.} \div 2.8372 \text{ bu.} = 281.9681 \text{ HL.}$;

$\$9 \times 281.9681 = 2537.73$;

$2537.73 - \$2400 = \137.73 , gain, *Ans.*

94. $\frac{13}{2}, \frac{39}{4}, \frac{65}{6}, \frac{117}{16}$; least com. mult. of numerators divided by greatest com. divisor of denominators $= 585 \div 2 = 292\frac{1}{2}$, *Ans.*

95. $\$7.25 \times 500 = \3625 , face of note;

$\$6.50 \times 500 = \3250 , cost of flour.

$\$3625 \times .9845 \times \$3250 = \$318.81\frac{1}{4}$, *Ans.*

96. 1 ft. $1\frac{1}{2}$ in. : 63 ft. :: 2 ft. 9 in. : x ; $x = 154 \text{ ft.}$, *Ans.*

97. $\$960 \div .08 = \12000 ;

$\$12000 \times 1.08 = \12960 , cost of 8's;

$\$12960 \div .80 = \$16200 = 162 \text{ shares}$, *Ans.*

$$98. \quad \$9020 \div \overline{\$1.10 \times 1.02\frac{1}{2}} = 8000 \text{ bu., } Ans.$$

99. One will receive \$9 as often as the other receives \$8.

$$\left. \begin{array}{l} \frac{9}{17} \text{ of } \$10927.60 = \$5785.20 \\ \frac{8}{17} \quad \quad \quad = \$5142.40 \end{array} \right\} Ans.$$

$$100. \quad \$530 \times 1.0275 = \$544.575, \text{ cost of draft ;}$$

$$\quad \quad \quad \underline{20.} \quad \text{transportation ;}$$

$$Ans. \quad \$564.575.$$

$$101. \quad \$1 - \$0.01225 = \$.98775, \text{ proceeds of } \$1 \text{ at bank disc't ;}$$

$$\text{Add} \quad \quad \quad \underline{.02} \quad \text{premium ;}$$

$$\quad \quad \quad \$1.00775, \text{ cost of exchange for } \$1 ;$$

$$\$800 \times 1.00775 = \$806.20. \quad Ans.$$

$$102. \quad \$500 \times .07 \times 10 = \$350, \quad \text{simple int. for 10 years ;}$$

$$\$35 \times .07 \times 45 = \underline{110.25}, \text{ int. on interest ;}$$

$$\quad \quad \quad \$460.25, \text{ annual interest ;}$$

$$\$460.20 - \$350 = \$110.25, \quad Ans.$$

The 45 above is the number of years which the interest
on int. is due ; $9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 45$.

103. Principal	\$850
Int. for 2 mo.....	8.50
	<hr/> 858.50
Payment.....	400
	<hr/> 458.50
New Principal.....	458.50
Int. for 6 mo.....	13.755
	<hr/> 472.255
Payment.....	360
	<hr/> 112.255
New Principal.....	112.255
Int. 1 yr. 4 mo. 18 da.....	9.317
	<hr/> \$121.57, Ans.

104. $\$1452 \div (1.10 \times 1.12\frac{1}{2} \times 1.25) = \$938.66\frac{2}{3}$, *Ans.*

105. $\$18 \times \frac{1}{3} = \6 , profits ; $\$18 - \$6 = \$12$, cost ;
 $\$6 \div 12 = 50$ per cent, profit, *Ans.*

106. $1.00 \div .07 = 14\frac{2}{7}$ years, *Ans.*

107. $\$517.00 \div 1.035 = \500

$\$793.75 \div 1.05\frac{5}{8} = 750$

$\$1326.47 \div 1.105 = \$1200.426 +$

$\$2450.426 +$, entire pres. worth ;

$\$2637.72 - \$2450.426 + = \$187.29 +$, *Ans.*

108. $\$500 \div .9935\frac{5}{8} = \$503.22 +$, *Ans.*

109. $\$1080 \div .05 = \21600 , stock required ;

$\$21600 \times 1.08\frac{1}{2} = \23436 , investment, *Ans.*

110. $\$1256 \div .9695 = \1295.51 , *Ans.*

(111.)

From Jan. 1, 1886, to Apr. 1, 1888, is 27 mo., Green's time ;

“ Mar. 1, 1886, “ Apr. 1, 1888, “ 25 “ Dodge's “

“ July 1, 1886, “ Apr. 1, 1888, “ 21 “ Childs' “

$\$3000 \times 27 = \81000 , Green's product ;

$2000 \times 25 = 50000$, Dodge's “

$1800 \times 21 = 37800$, Childs' “

$\$168800$, sum of products.

$\$168800 : \$81000 :: \$4388.80 : () = \2106 , Green's gain ;

$\$168800 : \$50000 :: \$4388.80 : () = \1300 , Dodge's “

$\$168800 : \$37800 :: \$4388.80 : () = \982.80 , Childs' “

112. $x \quad \$A^9 \quad \text{Ans.}$

2 49

2 25

75

21

21 441

21 da., *Ans.*

113. \$1.30, received for lumber originally worth \$1.00 ;
\$1.06 $\frac{2}{3}$, valuation of ditto, after 16 mo. int. accrues ;
 \$.23 $\frac{1}{3}$ gain on \$1.06 $\frac{2}{3}$:
 $$.23\frac{1}{3} \div \$1.06\frac{2}{3} = .21\frac{7}{8}$, or 21 $\frac{7}{8}\%$, *Ans.*
114. 1 yr. 6 mo. : 3 yr. 9 mo. :: \$750 : ()
 () = $\frac{\$750 \times 45}{18} = \1875 , *Ans.*
115. 10 mo. $\times \frac{1\frac{0}{3}\frac{5}{9}}{3} = 30$ mo. = 2 yr. 6 mo., *Ans.*
116. Int. of \$975 at 8% for 63 da. = \$13.65, discount ;
 \$975 - \$13.65 = \$961.35, proceeds of note ;
 \$1000 - \$961.35 = \$38.65, *Ans.*
117. 195 A. 2 R. 25 P. = 195.65625 A. ;
 $\$27.50 \times 195.65625 = \$5380.547+$, face of note ;
 int. of \$5380.547 at 7% for 4 mo. 18 da. = \$144.378,
 discount ;
 $\$5380.547 - \$144.378 = \$5236.169$, *Ans.*
118. \$6840 + int. from May 10, 1887, to June 21, 1888,
 = \$7297.14, the cost of the flour ;
 $\$6840 \div \$5.70 = 1200$ barrels purchased ;
 $\$6.625 \times 1200 = \7950 receipts ;
 $\$7950 - \$7297.14 = \$652.86$, *Ans.*
119. \$4500 - \$1800 = \$2700, B's gain ;
 $\$15000 \times 12 = \180000 , B's capital for 1 mo. ;
 $\$2700 \div 180000 = \$.015$ gain per month on \$1 ;
 $\$.015 \times 9 = \$.135$, gain on \$1 for 9 mo., or C's time ;
 $\$1800 \div .135 = \$13333.33\frac{1}{3}$, value of C's land ;
 $\$13333\frac{1}{3} \div 125 = \$106.66\frac{2}{3}$, value of land per acre, *Ans.*
120. $\$4200 \times 9 = \37800 $\$1500 \times 6 = \9000
 $\$4400 \times 7 = \underline{\$30800}$ $\$1000 \times 10 = \underline{\$10000}$
 A's product, \$68600 ; B's product, \$19000
 $\$68600 + \$19000 = \$87600$, sum of products ;
 $\$876 : \$686 = \$772.20 : (?) = \604.71 , A's gain ;
 $\$876 : \$190 = \$772.20 : (?) = \167.49 , B's " , *Ans.*

121. $48 \times 36 \times 18 \div 2150 \div 2 = 7.23$ A., *Ans.*

122. $\$1 - \$.0225 = \$.9775$; $320 \times \$10 = \3200 ;

$\$3200 \times .9775 = \3128 , draft;

312, transportation;

400, gain;

To be sold for $\$3840$.

$\$3840 \div 320 = \12 , *Ans.*

123. Proceeds of $\$1$ for 63 da. at 18% = $\$.9685$;

$\$.9685 = .9685 = \593.70 , *Ans.*

124. Proceeds of $\$1$ for 110 da. at 12% = $\$.963\frac{1}{3}$;

$\$187.50 \div .963\frac{1}{3} = \$194.63+$, *Ans.*

125. $1\frac{1}{2}$ A. = 256 P.; $\sqrt{256} = 16$ rd. each side;

$\sqrt{8^2 + 8^2} = 11.31+$ rd., from centre to corner;

$16 \div 2 = 8$ rd., from centre to middle of side, *Ans.*

126. $16 \text{ ch.} \times 15 \div 10 = 24$ A.;

$(160 \text{ P.} \times 24) \div 5 \times 6 = 128$ lots;

$\$50 \times 128 - \$100 \times 24 = \$4000$, *Ans.*

127. $(\$2.75 \times 160 + 40 \times 2) - (\$2.75 \times 80 \times 4) = \220 less, *Ans.*

128. 1 A. = 160 P.; $\frac{3}{8}$ A. = 60 P.;

$60 \text{ P.} \times 30\frac{1}{4} \times 9 \times 144 = 2352240$ sq. in.;

$2352240 \text{ sq. in.} \times 9 = 21170160$ cu. in.;

$21170160 \text{ cu. in.} \div 1728 \div 27 = 243.75$ cu. yd.;

$\$.60 \times 243.75 = \294.94 , *Ans.*

129. $114 \text{ in.} \times 51 \times 72 \div 2150.4 \text{ in.} = 194.66$ bu.;

$\$2.05 \times 194.66 = \399.05 , *Ans.*

130. $\$1 + \$.0225 = \$1.0225$, course of exchange;

.0105, bank discount of $\$1$ (63 da.);

$\$1.012$, cost of exchange for $\$1$;

$\$600 \times 1.012 = \607.20 , *Ans.*

131. $(324 \text{ bu.} \div .8) \div (6 \times 4\frac{1}{2}) = 15 \text{ ft.}, \text{ Ans.}$
132. $4 \text{ sq. ft.} = 4 \text{ sq. in.} = 580 \text{ sq. in.}, \text{ representing } 580 \text{ sq. mi.};$
 $640 \text{ A.} \times 580 = 371200 \text{ A.}, \text{ Ans.}$
133. Date of maturity = July 27, 1885 + 3 mo. 3 da. = Oct. 30, 1885;
 Term of discount = from Aug. 10 till Oct. 30 = 2 mo. 20 da. = 81 da.
 $\$957.37 - (\$957.37 \times .08 \div 365 \times 81) = \$940.37, \text{ proceeds,}$
Ans.
134. Date of maturity, May 1 + 93 da. = Aug. 2, 1886;
 Term of discount, May 15 till Aug. 2 = 79 days;
 $\$1315.75 - (\$1315.75 \times .07 \div 360 \times 79) = \$1295.54, \text{ proceeds,}$
Ans.
135. Date of maturity, June 12 + 6 mo. 3 da. = Dec. 15, 1887;
 term of discount, 30 da.;
 $\$1250 + (\$1250 \times .031) = \$1288.75, \text{ amount for 6 mo.}$
 3 da., or 186 da.;
 $\$1288.75 - \left(\frac{\$1288.75 \times .06}{360} \right) \times 33 = \$1281.66, \text{ proceeds,}$
Ans.
136. Base 45 ft. $\times \frac{1}{2}$ alt. 8 = 360, area of one end;
 $\$1.875 \times (360 \div 100) \times 2 = \$13.50, \text{ Ans.}$
137. $\$56 \div 18 = \$3\frac{1}{3}, \text{ cost of the first per month};$
 $\$35 \div 10 = \$3\frac{1}{2}, \text{ cost of the second per month};$
 $\$3\frac{1}{2} - \$3\frac{1}{3} \times 240 = \$93\frac{1}{3}, \text{ gain in 20 years by wearing the}$
 $\$56 \text{ suit, Ans.}$
138. $\$1 - \$.025 = \$.975, \text{ course of exchange};$
.01225, discount of \$1;
 $\$.96275, \text{ cost of exchange for } \$1;$
 $\$512.36 \div .96275 = \$532.18 +, \text{ Ans.}$

139. $\$62.50 \times 173.59375 = \10849.61 , price of farm ;
 Cash, \$2000 ;
 $\$8849.61 \times 1.03325 = \9143.86 , am't of note at maturity ;
 $\$9143.86 \times .03325 = \304.03 , bank discount ;
 $\$9143.86 - \$304.03 = \$8839.83$, proceeds of note ;
 $\$2000 + \$8839.83 = \$10839.83$, *Ans.*

140. $n = \frac{l-a}{d} + 1$; $1.54 - .50 \div 4 + 1 = 27$ da., *Ans.*

141. $24\frac{3}{8}$ ft. $\times 12\frac{3}{4} \times \frac{3}{4} = 235\frac{1}{8}$ cu. ft., *Ans.*

142. Pres. worth of \$356.25, due in 2 mo. 16 da. = \$351.79
 “ “ \$497.50, “ 4 mo. 16 da. = \$486.47
 Total due Sept 15, 1885, *Ans.* \$838.26

143. $\$300 \times .66\frac{2}{3} = \200 , cost ;
 $\$300 \div 1.03 = \291.26 , present worth of sale ;
 $\$291.26 - \$200 \div \$200 = .456 + = 45\frac{63}{100}\%$ gain, *Ans.*

144. $\sqrt{2150.42 \times 150} = 68 +$; 68 in. +, or 5 ft. 8 in. +, *Ans.*

145. $52^2 = 2704$, square of hypotenuse ;
 $48^2 = 2304$, square of perpendicular ;
 $\frac{400}{}$, square of the base ;
 $\sqrt{400} = 20$ ft., *Ans.*

146. $400 \times 4 = 1600$
 $500 \times 5 = 2500$
 $600 \times 6 = 3600$
 $\frac{1500}{} \times x = \frac{7700}{}$; $x = 5\frac{2}{5}$ mo. = 5 mo. 4 da., *Ans.*

147. This forms an arithmetical series, of which

$a = \$80 + \text{interest for 17 mo.} = \86.80 ;

$l = \$80$;

$n = 18$;

s , or am't due $= \frac{86.80 + 80}{2} \times 18 = \1501.20 , *Ans.*

$$148. \quad \$4200 - \overline{\$4200 \times .03} = \$4074, \text{ cash price;} \\ (\$4200 \div 1.02) - \$4074 = \$43.65, \text{ Ans.}$$

$$149. \quad \frac{\$1500 \times .07}{3} + \frac{\$1000 \times .07}{4} + \$2500 = \$2552.50, \text{ the value} \\ \text{of am't paid at the end of 6 mo.;} \\ \$3500 - \$2552.50 = \$947.50, \text{ the bal. to be paid at the} \\ \text{end of 6 mo.;} \\ \$947.50 \div 1.0175 = \$931.203, \text{ Ans.} = \text{present worth of} \\ \text{bal. at the time of 2d payment.}$$

$$150. \quad \$13 \times 963 \times 238 = \$29795.22; \\ \text{proceeds of } \$1 = \$9760\frac{5}{6}; \\ \$29795.22 \times .9760\frac{5}{6} = \$29082.617, \text{ Ans.}$$

$$151. \quad \$800 \div 1.05\frac{1}{4} = \$760.095 \\ \$800 \div 1.07 = 747.663 \\ \$1400 \div 1.14 = \underline{1228.07} \\ \$2735.828, \text{ Ans.}$$

$$152. \quad 125 \text{ A. } 48 \text{ P.} = 125.3 \text{ A.}; \quad \$1.75 \times 125.3 = \$219.275. \\ \text{All have in 700 sheep } \frac{1\frac{2}{5}}{7\frac{0}{0}} \text{ of } \$219.275 = \$39.156, \text{ A's;} \\ \frac{1\frac{5}{10}}{7\frac{0}{0}} \quad \quad \quad \text{"} \quad = \$46.987, \text{ B's;} \\ \frac{2\frac{0}{10}}{7\frac{0}{0}} \quad \quad \quad \text{"} \quad = \$62.65, \text{ C's;} \\ \frac{2\frac{2}{5}}{7\frac{0}{0}} \quad \quad \quad \text{"} \quad = \$70.481, \text{ D's.}$$

$$153. \quad \sqrt[3]{16 \times 8 \times 4} = 8; \quad 8 \text{ ft., Ans.}$$

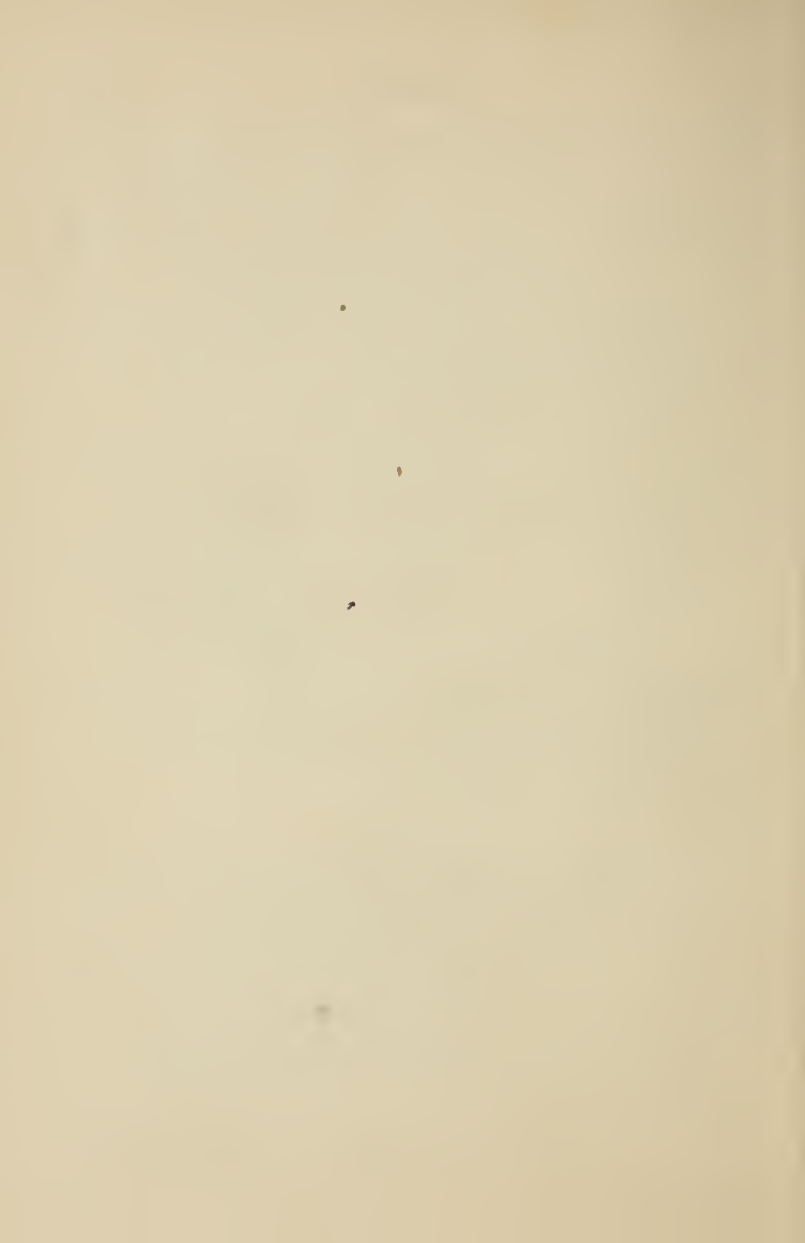
$$154. \quad \sqrt[3]{32 \times 27 \times 16} = 24; \quad 24 \text{ in., or 2 feet, Ans.}$$

$$155. \quad \sqrt[3]{91125} = 45; \text{ edge or cube, 45 ft.;} \\ 45^2 \times 6 = 12150 \text{ sq. ft., Ans.}$$

$$156. \quad 100\% \div 2\frac{1}{2}\% = 40, \text{ No. of years, Ans.}$$

$$157. \quad l + a = s \div \frac{n}{2}; \quad l + a = 408 \div 4 = 102;$$

$$a + (n-1)d = l, \text{ or } l - a = (n-1)d = 42. \text{ Hence,} \\ l = 102 + 42 \div 2 = 72; \quad a = 30, \text{ Ans.}$$



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